AMERICAN FARMER.

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WORK FOR THE MONTH.

MAY.

May is a season full of life and hope to the husbandman. All nature is fully awakened from the lethargy of winter, and every thing within the farmer's domain is full of energy, and springing forth to a new career of production. It is his part to direct and help this mysterious movement of life, and to use it for the various beneficent ends which fall within the circle of his duty. He is the honored agent of the Great Ruler to provide bread for his people, and his own comfort and happiness are proportioned to the faithfulness and intelligence with which he fulfils his mission. As during the past months he has had opportunity to mature and lay up stores of useful knowledge, based upon the past experience of himself and others, let him emulate now the flow of life which surrounds him in its practical application to the various useful purposes of his vocation.

The great crops which demand the attention of the mass of our readers during the present month are those of corn and tobacco. The wheat crop is now until harvest, except to keep it secure from the depredations of unruly stock, in His care, who alone, after all we may have done for it, can give the increase. With other crops, this is the season which especially demands the most active labours of the farmer; a failure now to meet the demands upon him will extend in its effects through the season.

The Corn Crop.

This crop will have been planted over a large portion of the country where our paper circulates, and the chief preparation made for it every where.—Those who have failed to give their grounds a deep and thorough ploughing, will lose for the season, the advantage they might have thus secured. No after cultivation can entirely compensate for this neglect. Where the corn is not yet planted, it is better to delay it, even as long as the 20th of the month, for the sake of a thorough surface cultivation with harrow and roller; and those who have already planted without such preparation, should give this cultivation without delay. We have heard farmers excuse the leaving their fields in a rough state, by saying that the use of harrow and roller started the grass too early. This apology was well met by a correspondent in our April number. That condition of the soil which makes the grass grow, makes the corn grow. No good manager is afraid of grass in his crop. It is his business to keep it down and he expects to do it at any rate. It would be just as wise to refuse to manure his land for the same reason.

Manure in the Hill.

Plaister and slacked ashes in equal parts—a small handful in the hill, or upon it after the corn is up is a good dressing. Any good compost will answer the purpose. A table spoon-full of Peruvian guano to the hill is practised by some corn planters; and in some sections of Maryland, the poudrette prepared by Mr. Baynes, of Baltimore, is a favorite application; apply as much as can be grasped in the hand.

We refer to our April No. for fuller directions for the management of this important crop.

Tobacco.

This is a most important season in the growing of this valuable crop. A cotemporary in New York, advises his readers to set out their plants about the last of March. This may do for the latitude of New York—at least we will not argue the point—but in Maryland we rarely begin the operation before the 20th of May, and the planter who can get a good stand of his whole crop by the 20th of June considers himself so far successful.

Preparation of the Ground.

Some planters have adopted a practice of postponing the ploughing of their tobacco ground until after corn-planting. Where there is scarcity of pasture, the practice furnishes grazing ground until the clover field can be turned upon, and planting on the first furrow, that is with a single ploughing, saves labor. The practice is a bad one, except on very light soils. In the first place, the tramping of the stock in the spring compacts the ground, and should the season prove a dry one, it will become so hard, as to make it impossible to get it in the very nice order, which is absolutely required for setting the young plants in. Under favorable circumstances this will be a difficult matter; and when it is considered how much depends, in the tobacco more than any other field crop, upon this careful working of the surface soil; the difficulty of [illegible] a stand on badly prepared land; the loss of [illegible] replanting, and the much greater loss in the irregularity of the crop, no consideration of convenience or a supposed saving of labor should be allowed to interfere with it. The ground should be well ploughed immediately after the breaking of winter, and harrowed to close the seams and prevent the grass from growing through them. This having been done, the second ploughing will be given in May and June, in immediate anticipation of planting. This ploughing

should be shallow, not disturbing the sod previously turned down, and will form a light moist bed, which will leave little labor for the hoes, and in which with any degree of care in planting, the plants will hardly fail to live and thrive.

MANURES.

The manures should be applied and mixed with the surface soil by the second ploughing, if barn-yard or stable manures are used. We would not recommend the use of manure having with it much coarse undecomposed litter; it keeps the ground too spongy and porous for the good of the young plants.

The best of the bought manures for Tobacco is an equal mixture of Peruvian and Phosphatic guanoes; many planters use Peruvian alone. Of the mixture the least quantity to be used is three hundred pounds per acre, and two hundred of Peruvian if used alone. Some use in more liberal quantities, and think the application sufficient for the Tobacco and the wheat crop following. These or other portable manures may be applied just before the ground is laid off and crossed for making the hills. A great advantage in the use of these manures is that by their help, instead of appropriating only certain of the best portions of the farm to the tobacco crop, the poorest may be used for the purpose.

Those who plant in drills open a furrow and strew the guano in the furrow, throwing over it a ridge with a furrow from each side, on which they plant. These ridges are three and a half feet apart, and the distance between the plants on the ridge eighteen inches or two feet. Again, those who plant in hills, not unfrequently drop the guano in the centre of the check, drawing the earth over it for the hill. A small spoonful is enough for each hill. Where Peruvian guano alone is used we recommend that an equal amount of Plaister be mixed with it.

PLANT BEDS.

These should receive constant attention. Keep the grass out of them by careful picking; after the first drawings for planting, pick them again. To ensure their holding on through the season with a supply of plants it is absolutely essential to keep them clear of grass. They should have frequent top-dressings too, of fine compost, or of guano well mixed with fine rich mould. The best security against the fly, is to make the plants grow so vigorously, that they get too coarse for their feeding.

In making your first planting, do not draw the beds too closely. Aim rather to relieve them of such large plants as crowd the beds, than to make a large planting very early. Too close drawing is very injurious to the beds, and setting out small plants very unprofitable labour.

POTATOES.

The crop next in importance which requires attention at this season is that of the potatoe. There is no farmer we suppose, but plants at least a small crop, and in aggregate it is one of great value to the comm[illegible] It should be planted and tended with more c[illegible] it usually receives.

SOIL.

The potatoe adapts itself to every variety of soil. It yields most abundantly on rather heavy and moist soils, but a light free soil makes them of better quality. They should by all means be planted on sod land, the richer the better. The crop would be more likely to be exempt from the fatal rot, if it were always on a turf rich enough to produce a full crop without the direct application of manures.

MANURES.

Unless the ground be rich, an abundant supply of manure should be applied. The most economical method of applying it, as regards the crop, is in the drill. Stable or barn-yard manure should be placed immediately over the potatoe plantings, before covering. The advantage of so applying it is that it preserves a uniform moisture, about the rootlets, a point of especial importance in the dry season to the potatoe. The coarsest litter and manure may be thus used advantageously for this crop. Should the manure not be rich in quality, it is advisable to give besides two to three hundred pounds of mixed guano, or of Peruvian mixed with one fourth its bulk of plaister. Ashes and plaister mixed in equal quantities make an excellent top-dressing, dropped upon the plants after they come up.

PUMPKINS.

This is a valuable crop if well cultivated, for milch cows, and for the early feeding of fattening hogs. It is very customary to plant it through the corn-field, where it is raised at little expense of cultivation. In this case, it should have extra manure in the hill, otherwise it will be raised at the cost of the corn. The labour of gathering them however, when scattered over a large field is considerable. It is better to devote a lot of ground to their exclusive use. It may be the poorest part of the corn shift, if you manure them well in the hill. List and lay off the ground eight feet square, and manure with any good compost or other manure.

CYMBLINS.

This is also an excellent crop for the same purposes for which the pumpkin is used. It is especially valuable for hogs, with the advantage that it comes into use much earlier in the season. There should always be at least enough in the truck patch for the use of the family and servants. Let the crop be managed as the pumpkin, except as to distance of the hills. Six feet each way will be a sufficient distance. Plant both crops by the last of the month.

FIELD PEA.

The field pea should be sown or planted by the middle of the month or soon after—though they may be sown as late as the latter part of June, if circumstances make it necessary to postpone so long. If intended for the improvement of the land, two bushels per acre should be sown broadcast. If the seed is the principal object, sow in drills three feet apart and give two or three workings with the cultivator. If you do no more, plant at least enough in the corn field to ensure a full supply for the use of the negroes in winter and spring. For this purpose the common black-eyed or the lady pea is best. For land improvement or hog feeding the black or the clay-pea. The clay-pea does not shed when ripe, and affords a longer time for gathering. Use plaister on this crop, by all means, soon after it gets above the ground.

MILLET.

Millet makes an admirable provender for horses or other stock. It will yield twice as much to the acre as the best timothy, and the crop is fit for the scythe in less than three months from the time of sowing.

A free loam is the best soil for it. The ground should be nicely prepared by harrowing and rolling, and well manured. So vigorous and heavy a growth is of course exhausting, and it should not be sown without a liberal supply of manure. Any

good compost, three hundred weight of guano, or good super-phosphate, or fifty bushels of ashes per acre, is a good dressing.

Sow by the last of the month or early in June, half bushel of seed to the acre.

SUGAR MILLET AND BROAD-CAST CORN.

These should be sown this month by those who want green food for cows or other stock in August and September; they are heavy feeders and must be well manured.

CARROTS AND OTHER ROOTS.

Carrots and parsnips if not yet sown, should be got in as early as possible this month, according to directions given in April.

Sugar Beet and Mangold Wurtel may be sown during the month, but the earlier the better.

SHEEP SHEARING.

Sheep shearing should be done in any warm weather after the 20th of the month. The fleece becomes very oppressive and liable to waste after that time. In case of a cold rain immediately after shearing, put them under cover. See that the work is done tenderly and carefully. Remembering the advice of our old friend Tusser:

"Reward not thy sheep, when ye take off his coat,
With twitches and patches as broad as a groat;
Let not such ungentleness happen to thine,
Lest fly with her gentil do make it to pine."

WORK IN THE GARDEN.

MAY.

In the garden as on the farm, this is a most important month. The vegetable crop generally is either now to be committed to the ground, or if already planted, will be in such a state as will command the watchful care of the cultivator. It is to be hoped that the foundation of a good garden has been already made, by a thorough spading and manuring. Whatever our habits of farm cultivation, no one expects to have a decent garden, without thorough cultivation. This small allotment at least should be a model of good culture, which the farmer may approximate on a larger scale as circumstances may allow. The results of deep digging, heavy manuring and neat clean tillage, if carefully noted and estimated will furnish him a valuable lesson for his farming operations, while it yields abundant and wholesome supplies for the table.

Root crops—Parsnips and Carrots—Should have been planted a month ago, but may still be planted in good ground.

Beets.—For late crop may be planted this month.

Irish Potatoes.—The early crop should have been planted as soon as possible after the frost was out of the ground. Do not plant late crop before the latter part of this month. If it is wished to put them in ground occupied by early peas, the planting may be delayed as late as the last week of June. They must be well manured unless the ground be very rich. Coarse litter placed over the plantings in the drill is a very good method of manuring. Plant in drills thirty inches apart and four inches deep, placing the sets six to eight inches apart.

Sweet Potatoes.—This favourite vegetable may still be planted by putting pieces in the hill, if you have made no provision by bedding to have plants. If you have them in beds, which is the proper method, the plants will now be coming on, and the hills or ridges should be got in readiness to plant them in when three inches in length.

Peas and Dwarf Beans.—Plant a few of these every two weeks, for a succession of crops. The Marrow-fat Pea is the best for the late crop.

Lima Beans.—Have a full crop of these planted early this month. They are nearly as good in winter as in summer, if pulled before they harden, and dried, and a supply of them should be carefully preserved.

Roasting-ear Corn.—Plant corn for table use every two weeks, till last of June, for a succession.

Tomatoe and Egg Plant.—Plant out from the beds Tomato and Egg Plants whenever large enough.—The tomatoe has become an important item of family consumption, and plants enough should be set out to furnish an ample supply for summer and winter use.

Cucumbers.—Plant Cucumber seed early this month.

Cauliflower, Cabbage and Brocoli.—Sow seeds of all these for late crops. If you have Early Yorks and Early Cauliflowers growing, keep them well worked.

Celery.—Sow seed at once for the main crops of this delightful winter vegetable.

Brussels Sprouts and Kale.—Sow seeds of these, to be planted out in July.

Other Plants.—Sow seeds of Cress, Mustard, Okra, Pepper and Nasturtium.

Cymblins and Squash.—Plant these early in the month in hills, with rich compost.

Medicinal, Pot, Aromatic and Sweet Herbs, should all be sown this month.

Weeds and Insects.—Be watchful to guard your young plants against these enemies; remember the importance of eradicating weeds and grass, before they get too strong a hold upon the ground.

Water.—Water in abundance is a chief element of success in gardening. No garden should be without a supply at hand, and it should be liberally used in dry weather.

VALLEY AGRICULTURAL SOCIETY.

The Valley Agricultural Society held its third annual meeting at the hall of the Court-House in Winchester, on Thursday, the first ult., the President, HUGH M. NELSON, in the chair.

The Executive Committee offered its annual report, which was read and adopted.

After which the officers were elected for the ensuing year, as follows:

President—HUGH M. NELSON, of Clarke.

Vice Presidents—THOMAS F. NELSON, of Clarke; BRAXTON DAVENPORT, of Jefferson; C. J. FAULKNER, of Berkeley; R. L. BAKER, of Frederick; JOHN STROTHER, of Morgan; G. W. WASHINGTON, of Hampshire; F. B. WELTON, of Hardy; S. LEWIS, of Rockingham; G. S. MEEM, of Shenandoah; SAMUEL GIBBONS, of Page; J. SMITH DAVISON, of Warren; B. F. RIXEY, of Fauquier; ROBERT L. WRIGHT, of Loudoun; JOHN G. LANE, of Rappahannock.

Recording Secretary—JAMES H. BURGESS.

Corresponding Secretary—P. N. MEADE.

Marshal—WM. A. JACKSON.

Curators—JAMES BOWLES, JONATHAN SMITH, HENRY M. BAKER, LEVI HIETT, WM. D. MCGUIRE, JAMES W. MASON, NATHANIEL BURWELL, JAMES H. KEMP.

REPORT ON THE PEA CULTURE

We give below some just remarks on the Pea Culture from a report read before the Union District Agricultural Society of South Carolina, taken from "The Farmer and Planter." We regret to find that the Pea Culture is not pursued as it should be even where its value is known and acknowledged.

The writer makes a proper distinction between a fertilizer and an ameliorator. He says the pea is only an ameliorator, as "if returned to the soil it gives back only what it received from it, with the addition of the carbonic acid and the ammonia." But let it be borne in mind how important these additions are which he seems to throw in by the way as of little importance. How large a portion of every plant does carbonic acid supply. And the money value of ammonia is estimated by the enormous sums we are paying continually for Peruvian Guano. It is a very important office of these broad leaved plants to gather these floating elements from the atmosphere and to put them in combination with potash, soda, lime, phosphoric acid and other inorganic elements, which they have brought up through their tap roots perhaps from the sub-soil. All returned to the soil together they form that humus which is the very bread of the more valuable plants. It is their ready prepared food upon which they feed and fatten without the necessity of working their lives out in the search for it:

"Notwithstanding the acknowledged importance of the pea crop among us, it receives very little attention. It is generally planted at the 2d or 3d plowing, with the corn, when it can receive very little work, and cannot do much in the way of growing until the corn is made and the fodder taken off. To be made profitable as a crop, it should be planted and cultivated by itself; and with very little care in this way, it can be made to pay on almost any soil. It is not reasonable to expect a fine yield of peas and corn from the same field at the same time. If they both make their fruit at the same time, they must interfere with each, and tax the soil heavily—for they derive their support from the same source, and contain elements near akin to each other.

It has been argued by many persons that the pea was a fertilizer—that it was the clover of the south; and the shortest and most economical means by which our lands could be restored to their original fertility, would be by the pea. This is claiming too much for it. By fertilization, we mean any process by which we restore to the soil those constituents of plants which have been taken from the soil by repeated cropping.

We are taught by analysis, that the pea contains potash, soda, lime, magnesia, phos. acid, sulp. acid, iron—these are all mineral properties, and must be derived from the soil, and if taken from the land, must exhaust it. If returned to the soil, it only gives back what it received from it, with the addition of the carb. acid and ammonia which it received from the atmosphere. From this it would appear that the pea cannot be relied upon as a fertilizer.

We have no doubt, however, of its value as an ameliorator. By amelioration, we mean any course by which the capability of a soil to yield crops may be improved without the application of manure—such as rest, rotation and turning under green crops. A soil, by one course of treatment, may be made to yield the proper food for plants readily and abundantly, while by another it may be made to lock up its treasures in a most miser-like manner. North of us, clover is the great ameliorator—but how is it used? The soil is well prepared, deeply plowed, harrowed and rolled,—wheat sown, guano or other manure added—clover sown on the wheat. When the wheat is harvested, repeated doses of Plaster Paris are given to the clover, to force it into luxuriance—after three or four years, wheat sown, and a heavy clover crop turned under with it, &c.

Now, if our lands were covered with pea vines, repeated applications of Plaster Paris, and the vines turned under, the improvements would be manifest. The pea has a long tap root, which sinking deep into the soil, would bring nearer to the surface the food of plants, while the broad leaf of the vine would protect by its shade the soil, and store up carbon and nitrogen derived from the atmosphere and soil, for the future use of plants.

The pea can never equal the clover, because it does not answer the purpose of clover in winter; but it is our best substitute, and we have no doubt but soils may be kept in better heart, and protected against deterioration for a long time, by rest and turning under the pea as a manure, more economically than any other process."

[Transactions of the New York State Agricultural Society.]

EXPERIMENTS ON INDIAN CORN.

B. P. JOHNSON, Esq.—Dear Sir:

I send you the results of some experiments with artificial fertilizers on Indian corn. The soil on which the experiments were made is a light, sandy loam. It has been under cultivation for upwards of twenty years, and so far as I can ascertain has never been manured. It has been somewhat impoverished by the growth of cereal crops, and it was thought that for this reason, and on account of its light texture and active character which would cause the manures to act immediately, it was well adapted for the purpose of showing the effect of different manurial substances on the corn crop.

The land was a clover sod, two years old, pastured the previous summer. It was plowed early in the spring, and harrowed till in excellent condition. The corn was planted May 23, in hills 3½ feet apart each way. Each experiment was made on the one-tenth of an acre. It would doubtless have been better to have had larger plots, but I was unable to get sufficient land of similar character to make the requisite number of experiments on a larger scale. Each experiment consisted of 4 rows with one row between each plot without any manure.

The manures were applied in the hill immediately before the seed was planted, with superphosphate of lime, and with plaster (gypsum or *sulphate of lime.*) The seed was placed directly on top of the manure, as it is well known that these manures do not injure the germinating principle of even the smallest seeds. The ashes were drop-

ed in the hill, and then covered with soil, and the seed planted on the top so that it should not come in contact with the ashes. Guano and sulphate of ammonia were treated in the same way. On the plots where ashes and guano, or ashes and sulphate of ammonia, were both used, the ashes were first put in the hill, and covered with soil, and the guano or sulphate of ammonia placed on the top and also covered with soil before the seed was planted. The ashes and superphosphate of lime were also treated in the same way. It is well known that unleached ashes, mixed either with guano, sulphate of ammonia, or superphosphate, mutually decompose each other, setting free the ammonia of the guano and sulphate of ammonia, and converting the soluble phosphate of the superphosphate of lime into the insoluble form in which it existed before treatment with sulphuric acid. All the plots were planted on the same day, and the manures weighed and applied under my own immediate supervision. Everything was done that was deemed necessary to secure accuracy.

The following table gives the results of the experiments:

Table showing the results of Experiments on Indian Corn, made in 1857, *near Rochester, N. Y.*

No. of the Plot.	Descriptions of manures and quantities applied per acre.	Bushels of ears of sound corn per acre.	Bushels of ears of soft corn per acre.	Total No. of bushels of ears of corn per acre.	Increase per acre of ears of sound corn.	Increase per acre of ears of soft corn.	Total increase per acre of ears of corn.
1	No manure,	60	7	67			
2	100 lbs. plaster (gypsum or *sulphate of lime.*)	70	8	78	10	1	11
3	400 lbs. unleached wood ashes and 100 lbs. plaster (mixed.)	68	10	78	8	3	11
4	150 lbs. sulphate of ammonia	90	15	105	30	8	38
5	300 lbs. super-phosphate of lime,	70	8	78	10	1	11
6	150 lbs. sulphate of ammonia and 300 lbs. super-phosphate of lime (mixed.)	85	5	90	25	....	23
7	400 lbs. unleached wood ashes (uncertain,)	60	12	72	....	5	5
8	150 lbs. sulphate of ammonia, and 400 lbs. unleached wood ashes (sown separately,)	87	10	97	27	3	30
9	300 lbs. super-phosphate of lime, 150 lbs. sulphate of ammonia, and 400 lbs. unleached wood ashes,	100	8	108	40	1	41
10	400 lbs. unleached wood ashes,	60	8	68	....	1	1
11	100 lbs. plaster, 400 lbs. unleached wood ashes, 300 lbs. super-phosphate of lime, and 200 lbs. Peruvian guano,	95	10	105	35	3	38
12	75 lbs. sulphate of ammonia,	78	10	88	18	3	21
13	200 lbs. Peruvian guano,	88	13	101	28	6	34
14	400 lbs. unleached wood ashes, 100 lbs. plaster, and 500 lbs. Peruvian guano,	111	14	125	51	7	58

The superphosphate of lime was made on purpose for these experiments, and was a pure mineral manure of superior quality, made from calcined bones; it cost about 2½ cents per pound. The sulphate of ammonia was a good, commercial article, obtained from London, at a cost of about seven cents per pound. The ashes were made from beech and hard maple (*acer saccharinum*) wood, and were sifted through a fine sieve before being weighed. The guano was the best Peruvian, costing about three cents per pound. It was crushed and sifted before using. In sowing the ashes on Plot 7, an error occurred in their application, and for the purpose of checking the result, it was deemed advisable to repeat the experiment on Plot 10.

On Plot 5, with 300 lbs. of superphosphate of lime per acre, the plants came up first, and exhibited a healthy, dark green appearance, which they retained for some time. This result was not anticipated, though it is well known that superphosphate of lime has the effect of stimulating the germination of turnip seed and the early growth of the plants to an astonishing degree; yet, as it has no such effect on wheat, it appeared probable that it would not produce this effect on Indian corn, which, in chemical composition, is very similar to wheat. The result shows how uncertain are all speculations in regard to the manurial requirements of plants. This immediate effect of superphosphate of lime on corn was so marked, that the men (who were at the time of planting somewhat inclined to be skeptical, in regard to the value of such small doses of manure), declared that "superphosphate beats all creation for corn." The difference in favor of superphosphate, at the time of hoeing, was very perceptible, even at some distance.

Although every precaution was taken that was deemed necessary, to prevent the manures from mixing in the hill, or from injuring the seed, yet, it was found, that those plots dressed with ashes and guano, or with ashes and sulphate of ammonia, were injured to some extent. Shortly after the corn was planted, heavy rain set in, and washed the sulphate of ammonia and guano, down into the ashes, and mutual decomposition took place, with more or less loss of ammonia. In addition to this loss of ammonia, these manures came up to the surface of the ground in the form of an excrescence, so hard that the plants could with difficulty penetrate through it. This is a fact which should be borne in mind in instituting future experiments. It would have been better undoubtedly, to have sown these manures broadcast, and I should have done so, except for the difficulty of sowing them evenly by hand on so narrow a plot, without risk of having some part of the manure blown on to the adjoining plots.

It will be seen by examining the table, that although the superphosphate of lime had a good effect during the early stages of the growth of the plants, yet the increase of ears of corn in the end did not come up to these early indications. On Plot 5, with 300 lbs. of superphosphate of lime per acre, the yield is precisely the same as on Plot 2, with 100 lbs. of plaster (*sulphate of lime*) per acre. Now, super-phosphate of lime, is composed necessarily of soluble phosphate of lime and plaster, or sulphate of lime, formed from a combination of the sulphuric acid, employed in the manufacture of superphosphate, with the lime of the bones. In the 300 lbs. of superphosphate of lime, sown on Plot 5, there would be about 100 lbs. of plaster; and as the effect of this dressing is no greater than was obtained from the 100 lbs. of plaster, sown on Plot 2, it follows, that the good effect of the superphosphate of lime was due to the plaster it contained.

Again, on Plot 4, with 150 lbs. of sulphate of

ammonia per acre, we get 90 bushels of ears of sound corn, and 15 bushels of ears of soft corn ("nubbins"), per acre: or a total increase over the plot without manure, of 38 bushels. Now, the sulphate of ammonia contains no phosphate of lime, and the fact that such a manure gives a considerable increase of crop, confirms the conclusion we have arrived at, from a comparison of the results on Plots 2 and 5: that the increase from the the superphosphate of lime, is not due to the phosphate of lime which it contains, unless we are to conclude that the sulphate of ammonia rendered the phosphate of lime in the soil more readily soluble, and thus furnished an increased quantity in an available form for assimilation by the plants—a conclusion, which the results with super phosphate alone on Plot 5, and with superphosphate and sulphate of ammonia, combined on Plot 6, do not sustain.

On Plot 12, half the quantity of sulphate of ammonia, was used as on Plot 4, and the increase is a little more than half what it is where double the quantity was used. Again, on Plot 13, 200 lbs. of Peruvian guano per acre, gives nearly as great an increase of sound corn, as the 150 lbs. of sulphate of ammonia. Now, 200 lbs. of Peruvian guano, contains nearly as much ammonia as 150 lbs. sulphate of ammonia, and the increase in both cases is evidently due to the ammonia of these manures. The 200 lbs. of Peruvian guano, contained about 50 lbs. of phosphate of lime; but as the sulphate of ammonia, which contains no phosphate of lime, gives as great an increase as the guano, it follows, that the phosphate of lime in the guano, had little if any effect; a result precisely similar to that obtained with super-phosphate of lime.

We may conclude, therefore, that on this soil, which has never been manured, and which has been cultivated for many years with the *Ceralia*—or in other words, with crops which remove a large quantity of phosphate of lime from the soil—the phosphate of lime, relatively to the ammonia, is not deficient. If such was not the case, an application of soluble phosphate of lime would have given an increase of crop, which we have shown was not the case in any one of the experiments.

Plot 10, with 400 lbs. of unleached wood ashes per acre, produces the same quantity of *sound corn*, with an extra bushel of "nubbins" per acre, as Plot 1, without any manure at all; ashes, therefore, applied alone, may be said to have had no effect whatever. On Plot 3, 400 lbs. of ashes, and 100 lbs. of plaster, give the same total number of bushels per acre, as Plot 2, with 100 lbs. of plaster alone. Plot 8, with 400 lbs. ashes, and 150 lbs of sulphate of ammonia: yields three bushels of sound corn and five bushels of "nubbins" per acre, *less* than Plot 4, with 150 lbs. sulphate of ammonia alone. This result may be ascribed to the fact previously alluded to—the ashes dissipated some of the ammonia.

Plot 11, with 100 lbs. of plaster, 400 lbs. ashes, 300 lbs. superphosphate of lime, and 200 lbs. Peruvian guano (which contains about as much ammonia as 150 lbs. sulphate of ammonia,) produced precisely the same number of total bushels per acre, as Plot 4, with 150 lbs. sulphate of ammonia alone, and but 4 bushels more per acre, than Plot 13, with 200 lbs. Peruvian guano alone. It is evident, from these results, that neither ashes nor phosphates had much effect on Indian corn, on this impoverished soil. Plot 14 received the largest dressing of ammonia (500 lbs. Peruvian guano) and produced much the largest crop; though the increase is not so great in proportion to the guano, as where similar quantities were used.

The manure which produced the most profitable result, was the 100 lbs. of plaster, on Plot 2.—The 200 lbs. of Peruvian guano, on Plot 13, and which cost about $6, gave an increase of 14 bushels of shelled corn, and 6 bushels of "nubbins." This will pay at the present price of corn in Rochester, although the profit is not very great. The superphosphate of lime, although a very superior article, and estimated at cost price, in no case paid for itself. The same is true of the ashes.

But the object of the experiment was not so much to ascertain what manures will pay, as to ascertain, if possible, what constituents of manures are required, in greatest quantity, for the maximum growth of corn. All our agricultural plants are composed of precisely the same elements; the only difference being in the relative proportions in which they exist in the plants. Thus, Wheat and Turnips contain precisely the same elements, but the ash of Wheat contains five times as much phosphoric acid as the ash of Turnips, while the Turnips contain much more potash than Wheat. This fact being ascertained by chemical analysis, it was supposed that Wheat required a manure relatively richer in phosphoric acid, than was required for Turnips. This is certainly a plausible deduction; but careful and numerous experiments have incontrovertibly proved that such is not the case—in fact, that an ordinary crop of Turnips, requires more phosphoric acid, in an available condition in the soil, than an ordinary crop of Wheat. From this fact and several others of a similar character, the conclusion is irresistible, that the chemical composition of a plant—the relative proportion in which the several elements exist in the plant—is not a certain indication of the manurial requirements of the plant; or in other words, it does not follow, that because a plant contains a relatively larger proportion of any particular element, that the soil or manure best adapted for the growth of this plant, must contain a relatively larger proportion of this element.—Wheat, Rye, Barley, Oats and Indian corn, all contain a relatively larger quantity of phosphate of lime; but it is not safe to conclude from this, that a soil or manure, best adapted for their maximum growth, must also contain a relatively larger quantity of phosphate of lime. We know positively from numerous experiments, that such is not the case with Wheat; and, it is therefore at least doubtful, whether such is true of Indian corn. On the other hand, we know from repeated experiments, that Wheat requires a large quantity of ammonia for its maximum growth, and as Indian corn is nearly identical in composition to Wheat, it is somewhat probable that it requires food similar in composition to Wheat. This, however, is merely a deduction, and deduction is never a safe rule in agriculture. We can obtain no positive knowledge in regard to the manurial requirements of plants, except from actual experiments. Hitherto, no experiments have been made in this country, on Indian corn, that afford any certain information on this point. Indeed, we believe no satisfactory experiments have been made on Indian corn, in any country, that throws any definite

ht on this interesting and important question. A w years ago, Mr. *Lawes* made similar experi-ents to those given above, on his farm, at Roth-mstead, England; but owing to the coolness of e English climate, the crop did not arrive at aturity. Numerous experiments have been made this country, with guano and superphosphate lime; but the superphosphates used were com-ercial articles, containing more or less ammonia, d if they are of any benefit to those crops, to hich they are applied, it is a matter of uncertain-whether the beneficial effect of the application due to the soluble phosphate of lime, or to the mmonia. On the other hand, guano contains th ammonia and phosphate; and we are equal-at a loss to determine, whether the effect is at-butable to the ammonia or phosphates, or both. order, therefore, to determine satisfactorily, hich of the several ingredients of plants is re-ired in greatest proportion, for the maximum owth of any particular crop, we must apply ese ingredients separately, or in such definite mpounds as will enable us to determine to what rticular element or compounds the beneficial ef-t is to be ascribed. It was for this reason, that lphate of ammonia, and a purely mineral super-sphate of lime, were used in the above experi-ents. No one would think of using sulphate of mmonia at its price, as an ordinary manure, for reason, that the same quantity of ammonia n be obtained in other substances; such as barn rd manure, Peruvian Guano, &c., at a much eaper rate. But these manures contain all the ements of plants; and we cannot know whether effect produced by them is due to the ammo-, phosphate or any other ingredient. For the rpose of experiment, therefore, we must use anure that furnishes ammonia without any ad-ixture of phosphates, potash, soda, lime, magne-, &c., even though it cost much more than we uld obtain the same amount of ammonia in her manures. I make these remarks in order to rrect a very common opinion, that if experi-nts do not pay, they are useless. The ultimate ject, indeed, is to ascertain the most profitable thod of manuring; but the means of obtaining information, cannot in all cases be profita-.

Similar experiments, to those made on Indian rn, were made on soil of a similar character, on out an acre of Chinese sugar cane. I do not rpose to give the result in detail, at this time, allude to them merely to mention one very portant fact, the superphosphate of lime had a y marked effect. This manure was applied in hill on one plot (the twentieth of an acre,) at rate of 400 lbs. per acre, and the plants on plot came up first, and outgrew all the others m the start, and ultimately attained the height about ten feet; while on the plot receiving no nure, the plants were not five feet high. This result entirely different from what I should re expected. It has been supposed, from the t that superphosphate of lime had no effect on eat, that it would probably have little effect on rn, or on the Sugar cane, or other *ceralia;* and as ammonia is so beneficial for Wheat, it uld probably be beneficial for Corn and Su-cane. The above experiments indicate that h is the case, in regard to Indian corn, so far the production of grain is concerned, though ve have stated, it is not true in reference to the early growth of the plants. The superphosphate of lime on Indian corn stimulated the growth of the plants, in a very decided manner at first, so much so, that we were led to suppose, for some time, that it would give the largest crop; but at harvest, it was found that it produced no more Corn than plaster. These results seem to indicate, that superphosphate of lime stimulates the growth of stalks and leaves, and has little effect in increasing the production of seed. In raising Indian corn, for fodder or for soiling purposes, superphosphate of lime may be beneficial as well as in growing the sorghum, for sugar-making purposes or for fodder, though, perhaps, not for seed.

JOSEPH HARRIS,
Rochester, N. Y., Feb. 8th, 1858.

(From Patent Office Report, 1856.)

CALCAREOUS MANURES.

[Continued from March Number.]

The Use of Burned Lime as an Application to the Soil.—The application of burned lime to the soil is of high antiquity, and its utility is such as has been recognized in almost every country in which agriculture has obtained much eminence; and certainly it has been more largely and extensively used as a fertilizer from a very remote period than any other mineral substance that has ever been made available in practical husbandry. Cato describes with much minuteness the best means of preparing it; and Pliny attests the use of slaked lime by the Roman cultivators as a dressing for the soil in which fruit-trees were grown. It was also applied with equal success by the Arabs in Spain. Hence it may be inferred that what has been good in all ages past is good at the present time.

When lime is applied to the soil, it is believed by some that it acts in two ways—one, as a *stimulant* that promotes vegetation by causing the soil with which it is mixed to exert itself, and the other, in promoting the growth of trees and plants by enriching the land as a *manure*, and adding to the quantity of vegetable food. By others, it is looked upon in a *chemical* and *medicinal* point of view, acting as an alterative, a corrector, a dissolver, or a decomposer—a disengager of certain parts of the animal, vegetable and mineral substances contained in the soil, and as a retainer and a combiner with others, but not as a substance, like dung or decayed organic matter, fit for the immediate use and nourishment of plants, except in small proportions. It also produces a mechanical alteration in the soil, which is simply and easily understood, and is the cause of a series of chemical changes that are really obscure, and are as yet susceptible of only partial explanation. In the finely-divided state of quicklime, or slaked lime, or of soft and crumbling chalk, it stiffens very loose soils and opens the stiffer clays; while in the form of limestone gravel or of shell-sand, it may be employed either for opening a clayey soil or giving body and firmness to boggy land. Thus, it proves very useful in tenacious, heavy, clayey soil, while it may be dispensed with in light ones, as scarcely, if at all, affecting them.

The purposes served by lime as a chemical constituent of the soil are at least of four distinct kinds, namely: First, it supplies a kind of inorganic food which appears to be necessary to the healthy growth of all cultivated plants. Secondly

it neutralizes acid substances, which are naturally formed in the soil, and decomposes or renders harmless other noxious compounds, that are not unfrequently within reach of the roots of plants. Thirdly, it changes the inert vegetable matter in the soil so as gradually to render it useful to vegetation. Fourthly, it causes, facilitates, or enables other useful compounds, both organic and inorganic, to be produced in the soil, or so promotes the decomposition of existing compounds as to prepare them more speedily for entering into the circulation of plants.

Burned or quicklime is of an *alkaline* or *basic* nature like potash and soda. Bodies of this kind form the chemical opposites to those of an acid nature, that is, they deprive them of their sour taste, and their acid properties and actions, in general, when they combine with them, while on their own side, they give up their basic properties. For instance, from the most corrosive hydro-chloric acid, and the most caustic soap-boiler's lye arises a compound which no longer tastes sharp or caustic, but only mildly saline, namely, common table salt.—Their mutual resignation and delivering up of their characteristic properties, which occurs in all cases where an alkaline base meets with an acid, is called *neutralization*, and a new product arising from the two is termed a *salt*.

A good soil, in a state of readiness for culture, must not possess any acid properties. All the cultivated plants grow less freely and less vigorously in soils containing acids, than in such as are weakly basic, or even neutral, and their growth becomes inferior in proportion as the quantity of acid in the soil increases. The production of acids takes place in every soil; for the humus, which originates both from the remains of plants and refuse remaining in the ground, and from stable manure, is of an acid nature; the soil, however, usually contains in its mineral constituents so many bases, (lime, magnesia, potash, and soda,) while the nitrogen of the stable-dung produces another, (ammonia,) that these suffice to neutralize the acids formed, and to convert the acid into tempered or neutralized humus. Combined with bases, the humus undergoes a far more rapid and extensive decomposition into food for vegetation; that is, into soluble substances applicable to the growth of plants, while the acid humus, whether produced by want of moisture, or by a superabundance of peaty substances, undergoes further decay, but slowly and with difficulty.

Lime is not merely a *base*, but a *very strong base*, and can therefore even extract from the weaker bases occurring in the soil the acids with which they are already combined. Hence, it acts with advantage in those cases where weaker bases are such as become soluble by combination with acids, and are in this condition capable of interfering with the growth of plants. Of this kind especially are the bases which originate from the ferruginous particles present in all soils covered with water, such as are situated in low-lands excluded from the access of atmospheric air by a tenacious covering. Humic and carbonic acids produced in such places render the particles of prot-oxyd of iron soluble, and these again cause the soil to become sterile or less fertile, just like the water which we see in ferruginous springs flowing from deposits of lignite or peat. On this account, fresh, black mud from ponds or lakes always acts injuriously upon fields and meadows the first years; hence the dead subsoil, when mixed at once with the surface soil, so often causes a diminution of fertility for one or more years. In like manner, in a soil which contains much pyrites, the oxygenation, or weathering, of the ground may really produce so much soluble salt of iron (green vitriol, or sulphate of iron) as to disturb the growth of plants. In all these cases, lime is an excellent means of rendering the iron insoluble, and, at the same time, of giving it a tendency to absorb oxygen from the air more rapidly and abundantly, whereby the black prot-oxyd of iron is changed into brown per-oxyd, (iron-rust,) which no longer acts injuriously upon vegetation.

Caustic or quicklime, as its name indicates, attacks the skin of the hand and dissolves it in washing, in the same way as potash or soda lye, and has a similar action upon other animal and vegetable substances, as many farmers, perhaps, have noticed on the sacks in which they have kept lime, which soon become rotten and soft. When lime is mixed with the soil, it acts in this *decomposing* and *dissolving* manner upon roots, leaves, straw, and other parts of vegetables, as also upon organic constituents of the soil, which are already partially converted into humus. It hastens the decomposition of those substances which are often very slow and disinclined to fermentation in heavy soils, not freely admitting atmospheric air to a greater activity; that is, to a more rapid fermentation, putrefaction, and decay, whereby they are decomposed into carbonic acid and ammonia, which are then absorbed by the roots of the living plants as the most important of all their food. The action which lime exerts in this way clearly agrees in appearance with that produced by direct fertilizers, such as stable manure, guano, &c. But there is this great difference between the two. The lime does not work with its own material, but at the expense of other matter, namely, that of the land or of its strength, while the direct manures act with their own power. It is, therefore, self-evident that the latter enrich the soil, while lime renders it poorer. The universal effects of this *independent*, *unmixed* liming or marling of land, which has been established by practice in Europe, as well as in many parts of this country, is obvious not only by the well-known German saying, "Rich father, poor children," but also by the still more precisely expressed maxim,

"Much lime and no manure,
Make both farm and farmer poor."

Besides, on heavy, inactive soils, lime may be expected to produce good effects by its decomposing and dissolving power in all cases where the soil is rich in organic remains, especially when the air has not had free access to it; consequently on new ground, reclaimed from forest, broken-up meadows, and pasture-land, reclaimed peat-bogs, salt-marshes, and low-lying lands after they have been well drained. But even burned lime frequently does not develop its effects until the second or third year.

Quicklime can also act as a *decomposer* and *prevent* of mineral substances. It causes, for instance, an unlocking of the mineral constituents of the soil, the products of which (silica, potash, &c.) can then be consumed as food by the plants growing upon it. The experience that liming pre-eminently favors the formation of haulm, and gives the straw of the Cereals great stiffness, is explai

d by this in the most simple manner: It is not the e which produces this, but the mineral substan- rendered soluble and therefore assimilable by e lime above all the silica. The results of these periments at the same time confirm the correct- ss of the opinion that the farmer need not pay attention to silica in manuring, since it exists most everywhere in sufficient quantity in the soil, t that he need only take care that there shall not a deficiency of its *solvents*, and of the conditions ich favor its solution. Thus, lime is a power- l means of assisting the oxygenation, or weather- g, of stony and earthy constituents of the soil; , therefore, forms an aid to those bodies, and rces such as air, water, carbonic acid, (humus,) at, &c., which carry on this process of decompo- tion everywhere in acting independently of hu- an interference. In a heavy soil, this natural eathering can, of course, only proceed slowly, cause the tenacity obstructs the access of air and e production of carbonic acid from humus.— hen, therefore, experience says that lime proves more favorable in heavy than in light soils, it ight certainly be deduced from the preceding tement, that its chemical action, now under nsideration, may claim an essential share in the neficial effects in the first case.

Lime forms a necessary constituent of all plants; not present in sufficient quantity in the soil, the owth of vegetation is poor; therefore, lime may t favorably in certain cases by supplying this de- iency. By far the majority of soils contains me abundantly sufficient for the requirements of e nutrition and development of plants; and, if nuring is performed regularly and properly, ere can still less be a want of such kind, since able manure, alone, conveys into the soil more me than is removed from it even in very abun- nt crops; cultivated soils rather grow continually icher in lime, and plants, which consume very uch lime in their development, especially if own in frequent succession in the same field, ill naturally lead much sooner to an exhaustion f the lime of the soil, than those plants which ke up lime moderately.

Carbonate of lime is far less *coherent* in texture, nd is of looser nature than clay or loam, so that has the power of improving tenacious soils me- hanically by rendering them less tough and solid; nd hence, more porous and open. Quicklime hanges into carbonate of lime by degrees in the oil, and will then consequently act in the same ay. When mixed with sand, on the contrary, it enders this more coherent and close.

Lime also imparts to mixtures of earths, as is hown by saltpetre beds, the power of converting itrogen, of putrefying and decaying vegetable and nimal substances into nitric acid, which enters nto combination with the lime to form nitrate of ime. According to some experiments made in England, lime is supposed to increase the power f earths to absorb ammonia from the atmosphere, nd to contribute indirectly, by the decomposition f ammoniacal salts in the soil, to a fixation of am- monia by the clay and silica. Quicklime absorbs arbonic acid gas from the atmosphere and from he soil, passing in the operation into the mild condition of carbonate of lime. Possibly, this also may afford assistance to the growth of plants.

Lastly, it has been observed that the develop- ment of plants proceeds somewhat more rapidly n soils manured with lime, so that they run more quickly through the period from germination to maturity on unlimed land. Such an action upon the duration of vegetation would be a recommen- dation of lime for agriculture in northern, and ele- vated exposed districts.

Chalk.

Chalk is another form of carbonate of lime that occurs very abundantly in many countries, and which, from its soft, earthy nature, has been ex- tensively applied to the land in many parts of Eng- land without burning. It is usually dug up from the pits, toward the close of autumn or beginning of winter, when full of water, and laid upon the land in heaps. During the winter's frost, the lumps of chalk fall to pieces, and are readily spread over the fields in spring. The quantity laid on varies with the quality of the soil, and of the chalk itself, and with the more or less perfect crumbling it undergoes during the season of win- ter, and with the purpose it is intended to serve.— It gives tenacity and closeness to gravelly soils, opens and imparts freeness to stiff clays, and adds firmness to such as are of a sandy nature. If a physical improvement of this kind be required, it is laid on at the rate of from 400 to 1,000 bushels to an acre. But some chalks contain much more clay than others, and are employed, therefore, in smaller proportions. For the improvement of coarse, sour, marshy pasture, it is applied at the rate of from 150 to 250 bushels to an acre, and speedily brings up a sweet and delicate herbage.— It is also said to root out sorrel from lands which are infested with this plant. These effects are pre- cisely such as usually follow from the application of marl, and, like marl, the repetition of chalk exhausts the land, if manure be not afterward added to it in sufficient quantity.

Application of Lime to Land.—It has already been observed that lime, from its nature, must act both as a stimulant and as a manure, while it makes the earth exert itself in the nourishment of vegeta- bles, in some measure, enriches it, and adds to the vegetable food. In some lands, the dissolving of the vegetable food, and fitting it for entering the rootlets of plants, may be most beneficial. In others, the communication of the power of at- tracting the vegetable food from the air may have an equally good effect. It will not be improper, therefore, to point out how lime is to be *applied*, so that it may chiefly answer one or the other of these purposes.

In uncultivated land, in which there is a large quantity of vegetable remains, lime ought to be used chiefly as a stimulus; and when improved land needs a recruit of vegetable food, it ought chiefly to be used as a manure. When thus in- tended as a stimulus, a large quantity should be applied at once, in an unslacked or half-slaked state; for it takes a considerable quantity to dis- solve rootlets, and other vegetable substances in the soil, and to produce the necessary degree of fermentation. When intended as a manure, a small quantity applied at a time is sufficient. It is probable that it requires only a small quantity of lime to impregnate a large quantity of earth, and communicate to it an absorbent quality in as high a degree as it is capable of receiving; and it is certain that it is in proportion to the absorbent power which it communicates, that the soil is en- riched by it. This is not mere conjecture. It is certain that a small quantity of lime will impreg- nate a large quantity of water, and communicate

to it all its virtues, and these in as high a degree, too, as it is capable of receiving.

The benefit to be derived from lime greatly depends, however, upon the nature and the state of the soil. Strong lands are much improved, for two or three crops, by this stimulant; but frequent repetition will not have the same good effect, unless the land in the interim has been placed under a clover or other green crop, by which vegetable matter will be introduced for the lime to act upon.

The deficiency of vegetable matter in light soils is one reason why lime does not always act upon them beneficially; and it should therefore be used very sparingly on these soils, with an interval of six or seven years between each liming. Indeed, it is often as necessary to change the mode of manuring land, as it is to change the crops to be cultivated; and it is from not sufficiently attending to this, that arable farms have become deteriorated, whilst the farmer fancied that he was doing great justice to the land by liming every third or fourth year. But let the introduction of a green crop be tried in such a case, and he will afterward find that his grain-crops increase, and his land is in better heart.

Some persons think, from witnessing its first effects, that they can always have recourse to lime with the same success, but in this, they will assuredly be disappointed; once in five, six, or seven years, according to the nature of the land, is as often as lime can be applied with advantage.

It may be proper to observe, likewise, that, when lime is applied in small quantities, as a manure, it is necessary to repeat the application frequently; it is probable that the soil loses it absorbent property communicated by the lime; for experience proves that, if lime be frequently used, it must be applied as a manure, and not simply as a stimulant; and to this end, it must be compounded with earth, clay, and other matter, to which it communicates its stimulating qualities, whilst its fertilising effects are thereby augmented. In this state, it will act powerfully as a manure, and be a valuable auxiliary in the hands of the farmer.

Most varieties of subsoil strata make good compounds with lime. Sand and lime, with peat or turf, if it can be obtained, should be mixed for a clayey soil; and subsoil clay and lime, for sands, gravels, loams, and peaty lands. No farmer need complain of want of materials to make fertilizing compounds, since every sort of soil may be used for this purpose; and not only is immediate fertility produced thereby, but there are few districts in the country, however barren, that may not be improved, or brought into a fertile state, by dressing with a well-proportioned mixture of earth, clay, sand, and lime. Care should be taken, however, to proportion the quantity of lime according as the land is light or heavy, cold or warm. Light soils have been hurt by too abundant application of lime; and while one part of lime to form six to ten parts of earth may do for light soils, one part of lime to two, three, or more parts of earth, will be required for heavy soils.

The application of lime, alone, to land long under tillage, is often found not to be beneficial; but, if the same quantity had been applied in a compound state, with sand, turf, earth, clay, or vegetable mould, good effects would have resulted.—On deep loams, lime may be applied in a caustic state, more frequently than to most other soils; but the testimony of experience is in favor of its being used in a compound state.

Quicklime has the effect of disengaging and setting free the ammonia from guano and fermenting manures. It is prudent, therefore, and a safer practice to apply the lime a short time before or after such manures have been laid upon the land. Where the soil is moist, and abounds in vegetable matter, there may not be much loss should the lime and other manure come in contact beneath its surface; but in dry soils, and on the surface of the land, the admixture of the two ought to be carefully avoided. After the lime has been some time in or on the surface of the soil, and converted into a mild state, it can exercise no injurious effect upon any kind of manure.

The most valuable variety of lime for agricultural purposes is that obtained by burning oyster shells, and allowing it to remain exposed to the air a few hours to slack. Quarry lime is not so good on account of the magnesia which it often contains, and from its small quantity or total want of phosphoric acid. The quantity used must depend upon the nature of the soil and the moisture, heat, or cold, of the climate; for, whilst 80 bushels to the acre are sufficient for sandy soils, loams will require 100, and clay 150 bushels. Again, in a hot sun, like that experienced in most parts of the United States, the quantity should not be more than half as much as in Great Britain, where the climate is cloudy, cool, and moist. It must be regularly spread, and lightly covered immediately with a plough, or harrowed in with the seed, but not too deeply, for lime, as a general rule, should be kept near the surface.

Those unaccustomed to the application of lime or charcoal to land, by sowing or spreading them upon the surface, are often at a loss to know how thick a coat to put on in order to dispose of a certain number of bushels to an acre. Therefore, to show at a glance, in the following table, the depth to the nearest thousandth part of an inch, a given number of bushels will cover an acre of ground, assuming the bushels to contain 2,150 42-100 cubic inches; also, the number of bushels necessary to cover an acre of land to a required depth. For example, if there be 300 bushels spread to an acre, the depth will be 103-1000 of an inch. If the depth be one inch, it will require 2,916 937-1000 bushels to cover the surface of an acre an inch deep:—

Bushels per acre.	Depth. Inch. Decimals.	Depth. Inch. Decimals	Quant. per acre. Bush. Decimals
20	0.007	1.0	2,916.937
30	0.010	0.9	2,625.243
40	0.014	0.8	2,333.550
50	0.017	0.7	2,041.856
60	0.021	0.6	1,750.162
70	0.024	0.5	1,458.468
80	0.027	0.4	1,166.775
90	0.031	0.3	875.081
100	0.034	0.2	583.387
200	0.069	0.1	291.693
300	0.103	0.05	145.846

Crushed limestone has often been applied to the soil with success in the crude or unburned state; but its effects are slow and more lasting than lime that has been burned. It has not the solvent activity of quicklime, however, nor the absorbing power of chalk; nor has it the minute division of

mild lime mixed with earth, while in an impalpable powder.

In a district where fuel is scarce, and limestone, or marble, plentiful, it might be cheaply crushed into a powder by means of water, steam, or animal power, and thus be economically prepared for improving most kinds of soil which are deficient in lime. But no lands in which calcareous matter naturally abounds, nor those containing a large proportion of imperfectly-decomposed vegetable remains, such as bog roots, moss, &c., can receive much if any immediate benefit by the use of unburned lime, unless it be to render clayey soils mechanically lighter and boggy ones more firm.

The benefits derived from burning lime for agricultural purposes are partly chemical and partly mechanical; for, while in a caustic state, it acts more promptly in producing those chemical changes, which follow from mixing it with the soil.—Even in the half-caustic state of spontaneously-slacked lime, its effects are more rapid and more quickly seen, than when it is entirely in a carbonate or unburned state. But the principal benefits arise from the minute state of division into which the lime is brought by burning and slacking.—When the burned limestone is slacked, if it is tolerably pure, the lime falls, or crumbles to a powder—finer, probably, than any which could be produced by mere mechanical means—finer, certainly, than any to which the farmer could bring it, by any crushing machine he could afford to employ.

The chief advantages to be derived from this fine state of division of lime are, first, it may be diffused more equally and more perfectly through the soil, and thus go much further in improving it. Secondly, it more readily combines with acid substances in the soil, and therefore sweetens it more readily and more quickly. And thirdly, it comes into closer contact with the organic substances in the soil, such as roots of grass, straw, leaves, &c., and consequently promotes more fully those chemical changes which are constantly going on in every fertile soil, to produce which, is one of the useful purposes for which lime is added to the land.

The above remarks are not intended to apply to such beds of impure limestone as may be employed for the manufacture of cements and hydraulic mortars; for these, when burned and ground to a powder, cannot be applied for the improvement of land in the usual way, without combining with the water or moisture in the soil, and shortly after become as hard as stone.

In countries abounding in limestone, there often exist scattered here and there, in the hollows and in the hill-sides, banks and heaps of sand and gravel, in which rounded particles of limestone are found. These are distinguished by the names of *limestone sand* and *gravel*, and are derived from the decay or wearing down of the lime-stone and other rocks by the action of water. Such accumulations are frequent in Ireland. They are indeed extensively diffused over the surface of that island, as we might expect in a country abounding so much in rocks of mountain limestone. In the neighborhood of peat-bogs, these sands and gravels are a real blessing. They are a ready, most useful, and largely-employed means of improvement, producing upon arable land the ordinary effects of liming, and, when spread upon boggy soils, alone, enabling them to grow sweet herbage, and afford a nourishing pasture. The proportion of carbonate of lime these sands and gravel contains is very variable. A sample of yellow sand, examined by Professor Johnston, contained 26 per cent. of carbonate of lime, the residue being a fine red sand, chiefly silicious; the other, a fine gravel of grey color, contained 40 per cent. of carbonate of lime in the form chiefly of rounded fragments of blue limestone, the residue consisting of particles of sand-stone, quartz, and granite.

The application of these mixed sands to boggy land will not only consolidate and otherwise improve the physical character of the soil but will greatly benefit its chemical composition. The fragments of granite, containing undecomposed feldspar and mica, will supply potash, and, perhaps, magnesia, to the growing plants, and will thus materially aid the fertilizing action on the limestone sand with which they are mixed.

From the N. Carolina Planter.

PREMIUM ON WHEAT CROP.

RALEIGH, Jan. 13, 1858.

Dear Sir: I send you for publication in the first number of your Agricultural paper, the inclosed papers, submitted to the Executive Committee of the State Agricultural Society, at their late meeting, by Dr. Wm. R. Holt, of Davidson. Upon lot No. 1, the premium of $40 was awarded, and upon Lot No. 2, the premium of $50.

Very respectfully, yours &c.,

W. D. COOKE, *Sec. Ex. Com.*

LOT No. 1

LEXINGTON, Davidson Co. N. C. October, 1857.

To the Executive Committee of the State Agricultural Society:

I submit a concise statement of the various particulars respecting the cultivation and product of the Lot No. 1, in Wheat, in 1857, submitted to the Executive Committee of the State Agricultural Society.

LOT No. 1—*At my Trantham Place.*—This Plantation was bought in 1828. The Lot named had been entirely exhausted and had not been in cultivation for a few years, and constituted a part of a grazing Common, and would not have repaid for cultivation as it then was. It consisted of 8 acres and 36 hundredths, and was set apart for a grazing lot, if it could be made to produce Clover.

After cleansing the land of stones, which were put into underdrains in a low, flat part of it, and grubbing up the sarsafras, old peach trees, mulberry shrub, persimmon bushes, &c., it was cultivated in corn and oats to cleanse it and test its remaining powers, with very poor returns. Eventually it was broken up seven inches deep and sowed in oats at the rate of 2 bushels per acre and they turned under in the milk state the last of June, 1843. Lightly manured all over the next Spring and put in corn. The result, a good crop followed with the next year a good crop of oats and stand of clover from spring seeding. The rotation has been since, mainly corn, oats, clover, clover. The latter grazed until within a few years, since I have began the cultivation of Wheat. The Rotation has been an irregular one—mainly wheat, corn, wheat, clover, clover.

The wheat crop now submitted, followed the last crop of clover in this rotation and was grazed very close. In August the lot was coultered 15

inches deep with three horses, 10 inches-apart in the furrows, and grazed in the mean time. Fallowed the last of August and first of September with three horse turning plows, to the depth of 8 inches—harrowed with heavy three horse harrows. The Fall season being very dry, and the fallowing being across the coulter furrows, the ground broke up into very large clods, upon which the harrows could not have much effect. The Clodcrusher (made by R. Sinclair, Jr., of Baltimore) was then introduced and passed with much effect over the whole, and repeated over the cloddiest portions. On the first week of November the Wheat and Guano was sowed—two bushels and one-eighth of the former, and 250 lbs. of the latter. Plowed in with one horse sharp, shovel Plows, harrowed, and then rolled with the Clodcrusher. The use of the harrow seemed most effective in tearing up and bringing to the surface the remaining clods, which were most beautifully reduced by the Clodcrusher. The field was brought into the most beautiful, fine and well pulverized condition, and left so until the 10th of last March, when it was sowed in grass seeds, viz: 6 quarts of clover seed and one bushel of orchard grass.

The wheat (white Etrurian) was cut on the 21st of June, with a three horse reaper, (made by Obed Hussey of Baltimore,) and was saved very clean. It could not have been cut with Grain Cradles, without great difficulty and loss. It stood very thick on the ground and much of it five feet six inches in height.

The yield, forty-six bushels and sixty-four hundredths per acre—of 60 lbs. to the bushel.

This lot, I omitted to mention, was frequently dressed, when in the clover part of the rotation, with leached ashes and Plaister of Paris, at the rate of 10 bushels per acre of the former, to one bushel of the latter.

The soil, a deep heavy, red clay loam. The natural growth on adjoining and similar lands, red and white oak, gum, hickory, dogwood, and wild grape vines. The largest yield heretofore on an adjoining lot was 25 bushels per acre, without Guano.

ESTIMATED COST OF LABOR, SEEDS, MANURE, &c.

Coultering (3 horses)	$2 50	per acre.
Plowing (3 horses)	2 50	" "
Harrowing (3 horses)	0 40	" "
Cl'd Crush'g Rol., (3 horses)	0 40	" "
Extra harrowing and clod-crushing,	0 10	" "
Seed wheat 2¼ bush. $1 25	2 65	" "
Guano 250 lbs. per acre	7 50	" "
Sowing wheat and Guano	0 20	" "
Shovel plowing	0 75	" "
Harrowing	0 40	" "
Clod crushing	0 40	" "
	$17 80	

	BUSHELS.	
Product	46 64	
At $1 25	11 66	
	$58 30	$58 30
Expenses		17 80
Nett proceeds		$40 50

Exclusive of Interest on land, and Taxes.

The above lot was broken up into an unparalelled rough and cloddy condition, and I determined to try the capabilities of my implements to bring it into a fine, pulvurient state, to make, in my view, the Guano pay, and to secure a good stand of grass for profitable grazing hereafter.

All of which is respectfully submitted,

W. R. HOLT.

LOT No. 2.

To the Executive Committee of the State Agricultural Society:

Statement of the Cultivation, Products, &c., of Lot No. 2, in Wheat, during the year 1857.

Three fourths of this Lot had been in the cultivation of cotton for 35 years successively, and for the last ten years had been manured with well rotted farm-yard manure every two or three years, and also every two or three alternate years dressed with leached ashes over the recent planted cotton seed, in the drill and on the surface—the general product of cotton in the seed from 8 to 1200 lbs.

In the Spring of 1856 it was deeply plowed, to 8 inches with three horse plows, harrowed and planted in corn. During the last of October the corn was gathered, the corn stalks cut close to the ground, removed to the barn yard, and Wheat at the rate of 2 bushels of early Purple Straw was sown to the acre, with at the same time 200 lbs. of Peruvian Guano—plowed in with sharp shovel plows and thoroughly harrowed with 3 horse harrows, and cross harrowed. The sowing of the wheat and guano was made the second week of November, and the land in the finest possible tilth.

The wheat was cut with a Hussey wheat reaper, and the yield on the 22.75 acres, 967½ measured bushels of early purple straw, weighing on Fairbanks' balances 65 lbs. to the bushel. At 60 lbs. per bushel, the yield is 46.07 bushels per acre.

This Lot No. 2, is at my Linwood Farm. The soil is naturally of the best quality of upland, and consists of a deep chocolate clay loam, lies very high and undulating, and is the north end of a field of 40 acres, and was cut off from the field in regular form, but was the best wheat in the field, as a portion of it the remaining winter was killed from the blowing off the deep snow and wetness of a part of the field.

ESTIMATED COST OF LABOR, SEED, MANURE, &c.

Listing off into 18 cut lands with 2 horses,	$0 15	per acre.
Sowing wheat and Guano,	0 20	" "
Shovel Plowing,	0 75	" "
Harrowing and cross Harrowing, 3 horses,	0 80	" "
Seed wheat,	2 65	" "
Peruvian Guano, 200 lbs.	6 00	" "
	$10 55	

	BUSHELS.		
Product	46 07	per acre.	
At $1 25	11 51¾		
	57 58¾		$57 58¾
		Exp.	10 55
			$47 03¾

Nett product, exclusive of interest on land, and taxes.

The charges for the labor of cultivation above made, may be considered by some too liberal, but from great experience I consider them about right.

All of which is respectfully submitted by

W. R. HOLT.

NORTH CAROLINA, Davidson County.

I, Azariah Williams, County Surveyor for Davidson County, being sworn, declare that I have carefully surveyed and measured the following Lots of land for Dr. William R. Holt, of Davidson County, and that the measurement is correct.

Viz: Lot No. 1—At his Trantham place near Lexington, from which a crop of wheat has been taken the present year, measured eight acres and sixty-three hundredths, (8.63 acres.)

Lot No. 2—At Linwood, his Jersey Plantation, from which also a crop of wheat has been taken the present year, measured twenty-two acres and seventy-five hundredths, (22.75 acres.)

AZARIAH WILLIAMS.

Sworn to and subscribed before me, an acting Justice of the Peace for Davidson County, on this the 16th of October, A. D., 1857.

C. L. PAYNE, J. P.

NORTH CAROLINA, Davidson County.

I, William R. Holt, of Lexington, Davidson County, being sworn, say that I took proper care to have the wheat grown on the within Lots, Nos. 1, and 2, measured by Mr. Williams, the surveyor, and that I believe the measurement of the wheat, as it was measured and tallied in the presence of myself and son, one or the other during the time, to be correct—as follows:

Lot No. 1, at the Trantham place, consisting of 8 acres and 63 hundredths, measured full measure, three hundred and sixty-eight bushels, (368 bushels) of White Etrurian Wheat, weighing 64 lbs.to the bushel, and at the rate per acre 60 lbs. to the bushel, of forty-six bushels and sixty-four hundredths, (46.64 bushels per acre.) (Measured in a sealed half bushel.)

Lot No. 2, at Linwood, my Jersey Plantation, consisting of twenty-two acres and seventy-five hundredths, measured under the same circumstances, nine hundred and sixty-seven and a half bushels of Early Purple Straw Wheat, viz:—(967½ bushels of 65 lbs. to the measured bushel.) At 60 lbs. to the bushel the measurement to the acre would be forty-six bushels and seven hundredths per acre, viz: (46.07 bushels per acre.)

The above I believe to be correct and true, (measured in a sealed half bushel.)

W. R. HOLT.

Sworn to and subscribed before me an acting Justice of the Peace for Davidson County, on this the 16th of October, A. D., 1857.

C. L. PAYNE, J. P.

NORTH CAROLINA, Davidson County.

I, James M. Holt, witnessed the tallying and measurement of the aforesaid Wheat from the Lots named in the aforegoing paper, and being sworn, say that I believe the measurement to be correct, as care was taken to have it so.

JAMES M. HOLT.

Sworn to and subscribed before me, an acting Justice of the Peace for Davidson County, October 15th, 1857. C. L. PAYNE, J. P.

Inspectors of Grain in Baltimore City.—The Governor has appointed the following inspectors of grain for Baltimore city under the act of the last Legislature:—Wm. Frazier, of Dorchester county, (who will probably be the chief inspector;) John H. Hodson, of Dorchester county; James Treakle, of Howard county; T. D. H. Ruth, of Kent county; Teagle Townsend, of Worcester county.

EXPERIMENTS WITH MANURES.

The following interesting experiments, with several varieties of Guanos and Superphosphates, made by a very intelligent and pains-taking farmer of Delaware, will be read with interest and profit:

SPRING MILLS, Jan. 15, 1857.

DEAR SIR:—My report of experiments with concentrated manures on the corn crop of 1856, which was read by you before the Society at the last annual meeting, was so favorably received by the Society, and so favorably noticed by the press that I was induced to repeat the experiments on the crop of 1857, and extend them to a greater number of articles, and herewith offer the following report:—

I purchased last spring from the proprietors or their accredited agents, six different fertilizers, which I will give below with the amount of each, cost of each and loss and gain of each article separately, with some remarks on the general appearance of the crop while growing, together with my unbiassed opinion on the fitness of the several articles experimented with for corn and other crops. In doing this, justice and truth will compel me to speak in a manner that may seem adverse to the interest of some, though I have no wish or desire to say anything that may injure any one, and feel perfectly friendly to all engaged in the manufacture of good fertilizers. Yet friendly as I feel, I look upon the interest of the farmer of higher importance than the interest of all the manufacturers of patent fertilizers together. I ask no man to be governed by my opinion; but advise all to test the matter for themselves.

The land selected for the present experiments is high land, red clay bottom with sufficient sand to make it easy to cultivate, and suitable when made rich to grow any crop that can be grown in this latitude.

It had been in wheat two years previous, and was laid in clover; one year at rest and one in pasture. I had it well broken with a large plow; signed out both ways 4 feet distant—had the manure scattered in and near the crossing. I then had a small furrow harrow (made for the purpose) run up and down the row, which extended the fertilizers and fully incorporated them with the soil.

The following is the order of the experiments:

No. 1. Six rows, 125 hills each, without manure,

No. 2. Nine rows, " " Columbian guano—155 lbs. at 2½ cts. per lb. $3 49

No. 3. Ten rows, 125 hills each, Pacific Ocean Guano—160 lbs. at 2½ cts. a lb. 4 00

No. 4. Eight rows, 125 hills each, Jourdan's Super-Phosphate—150 lbs. at 2¼ cts. per lb. 3 37½

No. 5. Ten rows, 125 hills in each, Peruvian guano—180 lbs. at 3 cts. per lb. 5 40

No. 6. Twelve rows, 125 hills in each, Pomeroy's Super-Phosphate—232 lbs., at 2¼ cts. per lb. 5 22

No. 7. Twelve rows, 125 hills each, Allen & Needles Super-Phosphate—239 lbs. at 2¼ cts. per lb. 5 37

No. 8. Six rows, 125 hills each, without manure.

The first six rows, No. 1, was taken from one side, and the last six, No. 8, on the other, so as to ascertain whether there was any material difference in the quality of the land. The result gives but one basket difference between No. 1 and No.

8, which shows the land to be very nearly alike.

General appearance of the Crops while growing.

June 8th—Allen & Needles' Super-Phosphate healthy, and so far ahead of everything in the field, that persons passing made inquiry of what had been done for those twelve rows. Pacific Ocean Guano second best. Jourdan's third. Columbian fourth. Peruvian fifth. Pomeroy's sickly tinged with blue, and showed really worse than that portion without manure.

June 20th—Allen & Needles' Super-Phosphate still ahead. Jourdan's second. The balance about equal except Pomeroy's—it is still behind all, but improving in appearance.

About this time Allen & Needles' Super-Phosphate had forced out quite a number of side suckers, and it being a mooted question with some whether it was best to pull them off or let them remain, I determined to draw them from six rows and let them remain on six. The result shows that drawing the suckers lost two baskets.

The following table will show the result of the experiments:

No. 1. Six rows without manure made 16½ baskets.

No. 8. Six rows without manure made 15½ baskets. Aggregate of twelve rows without manure, 32 baskets. Each basket averaged 36 lbs. of shelled corn. This gives to each unmanured row 96 lbs. shelled corn—the aggregate of twelve rows being 1,152 lbs.

No. 2—Columbian Guano.

Nine rows made 31 baskets—1,116 lb.; from which deduct 96 lbs. for each row — 864 lbs. (this being what the land would have made without manure,) and it leaves a balance to credit guano—252 lbs. This at 56 cts. per bushel would be one cent per pound, or $2.52. Deduct this from the cost of 155 lbs. of guano, which was $3.49, and it gives a loss on this amount, of 97 lbs., or at the rate per ton, of $12.51½.

No. 3.—Pacific Ocean Guano.

Ten rows made 38½ baskets—1,386 lbs.; from which deduct for land, 96 lbs. each—960 lbs., and it leaves to credit of guano, $4.26. Deduct this from the cost of 160 lbs. of guano, at 2½ cents per lb., which is $4, and it gives a gain to guano, of 26 lbs., or at the rate per ton, of $3.25.

No. 4—Jourdan's Super-Phosphate of Lime.

Eight rows made 22½ baskets—810 lbs. Deduct for land, 8 rows at 96 lbs. each—768 lbs., and it leaves to credit of super-phosphate, 42 lbs. Deduct this from the cost of 150 lbs. of super-phosphate at 2¼ cts. per lb.—$3.37½, it gives a loss on the amount, of $2.95½, or at the rate per ton, of $39.33½.

No. 5—Peruvian Guano.

Ten rows made 35½ baskets—1,278 lbs. Deduct for land, ten rows at 96 lbs. each—960 lbs., it leaves to credit guano 318 lbs. Deduct this from the cost of 180 lbs. of guano at 3 cents per lb., which is $5.40, it gives a loss on this amount, of $2.22, or the rate per ton, of $24.66⅔.

No. 6—Pomeroy's Super-Phosphate.

Twelve rows made 32 baskets—1,152 lbs., or just what the land would have made without manure. This gives an entire loss of the cost of 132 lbs. super phosphate at 2¼ cents per lb. of $5.22, or at the rate per ton, of $45.

Allen & Needles' Super-Phosphate.

Twelve rows—first six rows made 16½ baskets; second six, with side suckers drawn, made 14½ baskets; to which add for loss by drawing suckers, 2 baskets—aggregate 33 baskets, or 1,188 lbs.—Deduct for land, 12 rows, 96 lbs. each—1,152 lbs., and it leaves a gain of 1 basket—36 lbs. Deduct this from the cost of 239 lbs. of super-phosphate at 2½ cents per lb., which is $5.37½, and it gives a loss on the amount, of $5.01, or at the rate per ton of $41 92½.

I will here state that I superintended (with book in hand) the application of the manures and gathering of the crops so as to be certain that there was no mistake.

I may in justice to Pomeroy say, that his super-phosphate in 1856, showed while the crop was growing, fully equal with others. Though for some cause it was worthless this year for either corn or fodder, and in justice to Allen & Needles, may say that theirs being in advance of all others, suffered more than any from a dry spell that happened here, just at the time *very early corn* was making grain, in which Jourdan's also shared to some extent. But I am forced to the conclusion from the above and previous experiment, that neither Peruvian guano or any of the super-phosphates, will pay on corn at present prices, especially on land that will make 25 or 30 bushels per acre without manure; and I have my doubts whether the super-phosphates will pay on any of the *cereals*. But notwithstanding my doubts and my knowledge of the failure of Allen & Needles' super-phosphate on corn, I phrchased one ton of the same article last fall for wheat. I was induced to do this from the fact of its proving itself capable of forcing the crops forward to early maturity, which is the great desideratum for wheat on land in this latitude—much of our land having all the material necessary to perfect the grain except ammonia or some other stimulant, which seems necessary to force the crop forward in advance of *frost, fly and rust;* and this property I hope to find in Allen & Needle's super-phosphate and others of like purity.

I think that from all that I can learn, that genuine super-phosphates may be safely recommended for grass crops, turnips, and perhaps for root crops in general, and especially for Chinese sugar cane, as the stalk is the chief object for which it is cultivated, the seed being only a secondary consideration. It may be seen by reference to the table that Pacific Ocean guano is the only article that paid first cost. It would therefore seem preferable to Peruvian at present prices, or even pound for pound; for 160 lbs. of Pacific made 1,386 lbs. of corn, while 180 lbs. of Peruvian made only 1,278 lbs., each having the same number of rows. The Pacific paying $3.25 per ton over cost, and the Peruvian losing $24.66 per ton. The Columbian stands second best in point of economy, it having lost but $12.51½ per ton, though I must confess that I had no confidence in it when I applied it; and considered it worth about as much as so much sand.

I commenced these experiments hoping to find in super-phosphates or something else a substitute for Peruvian guano, (the exorbitant price of which places it beyond the interest of the farmer to purchase,) and if I succeed in pointing the farmer to a source from which fertilizers may be obtained at remunerative prices, I shall feel amply rewarded for all my trouble and expense. But if on the other hand, my counsel should lead any to purchase

an article that proves worthless, I shall exceedingly regret such a result. I can only say that the statement herein made is true, and believe that like articles will produce like results another year.

Very respectfully, &c. T. B. COURSEY.

To MANLOVE HAYES, *Corresponding Secretary of Agricultural Society of Kent County, Delaware.*

ORCHARD GRASS.

The following we clip from the *Germantown Telegraph*, in testimony of the value of a grass we have often taken occasion to commend. For a permanent upland meadow it is unquestionably the best grass now known to us—taking into consideration both hay and pasturage. Timothy is the popular Hay grass, and those who make hay for market must confine themselves chiefly to that.—But for consumption on the farm and pasturage combined, it does not compare with Orchard Grass. For pasturage the latter is especially valuable. It springs early and continues later. Endures drought, and requires to be close fed to keep it in order. With seed enough put on the ground, it makes a close turf, and it never runs out.

Let us give a word of caution however: the seeding with orcherd grass is costly, and it should not therefore be sown except on well prepared ground in good condition:—

"I have just finished the perusal of a "Treatise on Grasses and Forage Plants, by Charles L. Flint, of Massachusetts," a second edition of which I found had been recently published by a New-York Bookseller. It is in my opinion an excellent and practical little work, which every farmer should possess himself of and study. In connection with the subject, I propose to give my experience of the value of a variety of grass which I think is not understood or appreciated by most of our farmers. It is the *Orchard Grass* or *Rough Cocksfoot. Flint* says this grass was introduced into England from Virginia, in 1764, in which latter place it had been cultivated for several years previously. It is now one of the most widely diffused grasses in England, and is highly prized there.

Orchard grass, in my experience, yields a greater amount of pasturage than any other, and is better suited to sustain a drought than any other grass we are yet acquainted with in this country. In the severe drought of 1856 in this section my Farm Book reads as follows —

"July 15. Grass fields suffering greatly for want of rain." "20th. Clover and rye grass fields look as if a fire had passed over them." "Pasturage in these fields quite gone." "The field of green grass of 35 acres, but little better, affording scanty pasturage to a few sheep and cows." "The orchard grass field of 20 acres, supporting entirely the store cattle, 40 head, and still looking green, and our only dependence." "If it fails us, we must feed away the sheaf oats." It did not fail us, but carried the cattle through the drought, which was not broken until the 15th of August, while the same field had been well pastured during the whole season. When the rains of August started the other grass fields, and we could relieve the orchard grass from duty, it looked as if an invading army had passed over it. But with a little rest and a few showers, in ten days it was ready for reasonable pasturage again.

Orchard grass is of rapid growth, and a field well set with it affords earlier and later pasturage than any other, green grass not excepted. When cut in blossom with red clover it is said to be an admirable mixture for hay, althongh of this I have had no experience. For pasturing, be sure to keep it *well grazed*, to prevent it from forming tufts and running to seed. Every kind of stock I have yet turned upon it in its green state, are fond of it. It is a lasting grass, endures the shade well and is not as exacting upon the soil as either timothy or rye grass. It succeeds best when sown in the spring, about the same time as clover on wheat ground, say four quarts of clover, crossing with one and a half bushels of orchard grass to the acre. If sowed alone, I would sow two bushels to the acre. It may succeed in the fall on early wheat, harrowed in very lightly after the wheat is covered. For hay, cut it in blossom in June. From the quantity of seed required, it is somewhat expensive at first, but afterwards the farmer should save his seed himself, which is readily done. The seed is very light, weighing about twelve to thirteen pounds to the bushel.

In my experience, the merits of orchard grass can thus be summed up, viz: Early and rapid growth; resistance to drought; abundance of return in pasturage; endurance of shade; and in affording earlier and later pasturage than any other grass.

NEW-CASTLE COUNTY."

COMPARATIVE VALUE OF MEXICAN AND PERUVIAN GUANOS.

Mr. E. G. Booth, of the Nottoway (Va.) Club, presents the following report to the President thereof. Whatever may be the cause, the consumers of Peruvian guano are daily coming to the same conclusion at which Mr. Booth has arrived, in regard to its more recent effects. See also Prof. Voelcker's remarks on page 371. The union of the Phosphatic with the Peruvian will, we believe, be found to be the substitute required by most plants for Peruvian alone.

"I propose to present some observations concerning the comparative results from the application of Mexican and Peruvian Guano.

"The first was in corn on contiguous acres, and much more favorable to the Peruvian—but on wheat it was reversed. Whether the strength of the Mexican was in reserve for future development, or whether its adaptation to wheat is a peculiar characteristic, it may be difficult to decide. I, last fall, tried a similar experiment, directly in wheat, and at this time, the effect is most favorable to the Mexican, and the Peruvian exhibiting but little benefit. My own impression is, that the Peruvian Guano, with which we are now supplied, is not as good as formerly, or certainly its effect is not so advantageous. It may, in part, be ascribed to the seasons, or to repeated application to the same land.

"It is certainly a matter of important consideration whether its use to the extent, at one time considered so beneficial and remunerative, can be continued for the future, or what substitute can be provided? and my object has been so to present the subject as to secure a comparison of opinions on such an important matter."

CORRECTION.—In the March No. the writer's name of an interesting communication is given as John D. Thom. It should have been *John D. Thorne*, of Brinklyville, N. C.

AMERICAN FARMER.

Baltimore, May 1, 1858.

TERMS OF THE AMERICAN FARMER.

Per Annum, $1 in advance—6 copies for $5—13 copies for $10—30 copies for $20.

ADVERTISEMENTS.—For 1 square of 8 lines, for each insertion, $1—1 square per annum, $10—larger advertisements in proportion—for a page, $100 per annum; a single insertion, $15, and $12 50 for each subsequent insertion, not exceeding five. Address,

S. SANDS & WORTHINGTON,
Publishers of the "American Farmer,"
At the *State Agricultural Society's Rooms*, 128 Baltimore-st.
Over the "American Office," 5th door from North-st.

STATE AGRICULTURAL CHEMIST.

It will be seen by the advertisement on another page, that the State Agricultural Chemist, Mr. P. T. Tyson, has established an office in the University Buildings, (formerly Baltimore College,) on Mulberry, near Charles street.

The bill which passed the Senate, providing for an office and the requisite assistance, was not reached in the House, owing to the press of business in that body—hence the arrangement alluded to in Mr. Tyson's card.

It being the intention of Mr. Tyson, as we are informed, to devote his time to investigations in the counties, except in the inclement seasons of the year, the arrangements above noticed, (which he has provided at his cost,) are rendered necessary.

As it is intended to form a State Cabinet, it is hoped that our friends will lend their aid, by forwarding specimens of rocks, clays, marls, limestones, peculiar soils, ores and other mineral substances. Each specimen should be separately wrapped up, and be accompanied by a label, giving the exact locality, with the name and residence of the party sending it, &c.

Mr. Tyson will be at work during the months of May and June, in the lower counties, on both shores.

☞We are indebted to the Hon. Mr. Gilleland of the Pennsylvania House of Representatives, for a bound copy, vol. 4, of the Transactions of the State Agricultural Society, for the year 1856.—Besides the Proceedings of the Society, it contains valuable addresses and essays. Among the latter we find an interesting paper on the cultivation of the Vine, by the Corresponding Secretary, Sydney G. Fisher, Esq. We have also from the same gentleman, copies of the address of Edwin C. Wilson, Esq., delivered before the same Society, at its annual exhibition in September, 1857.

We observe that the Transactions of the Society are published by order of the State Senate, at the State's expense.

EXPERIMENTS WITH MANURES.

We publish on another page, a paper upon this subject from the pen of *Jos. Harris*, Esq., of Rochester, N. Y., to which was awarded the premium of $75 by the N. Y. State Agricultural Society at its meeting in March last. It will be read with much interest, as will that of Mr. Coursey, of Delaware, also published this month—and the results will no doubt astonish many of our readers, differing as they do very materially from the effects which were to be expected from some of the manures employed in the experiments. We hope that as many kinds of manures are being purchased and used for the spring crops, our farmers and planters will institute similar experiments and report the results to the public. At the Md. College Farm, a variety of the superphosphates and other manures sold in our market, have been procured by gift or purchase, which will, we hope and expect, be thoroughly tested this year.

PLAN OF A COUNTRY VILLA.—We present in this month's "*Farmer*," another design for a Country Villa, which has been erected by Messrs. Dixon, of this city, for W. Wilson Byrne, Esq. near Cambridge, Md. The increased value given to every estate, by some attention to ornament, combining utility, in the erection of farm buildings, and by an ample supply around them of flowers, fruits and shrubbery, must be obvious to every reflecting mind—and it gives us great pleasure to be instrumental in any manner in encouraging a taste for such improvements. It is but justice to Messrs. Dixon, to publish the annexed note to them from Mr. Byrne, testifying his appreciation of their skill and taste as architects. He says:

"It affords me pleasure to say to you that in the construction of my house you have done yourselves credit, and me justice. It is imposing, comfortable, and convenient, in winter and in summer."

CAMPBELL MORFIT, Esq., has resigned the chair of "Analytical and Applied Chemistry," in the University of Maryland, and removed to the city of New York, where he intends devoting his exclusive attention to private practice as an analytical and consulting chemist. We exceedingly regret that our State loses the services of this distinguished *savant*, whose works in the particular line of his profession, have placed him, even in the early dawn of his life, in the front rank among the scientific men of our country.

THE WHEAT CROP.—The appearance of the growing wheat, we learn from various sections of the country, is very flattering—and should it receive no drawback, (to which, however, it is subject, to the last day of its ripening,) we have reason to anticipate a full crop; though we doubt if there was as great a breadth of land sown in this cereal last Fall as in the preceding year.

MARYLAND AGRICULTURAL COLLEGE.

The Trustees of the Agricultural College have had frequent meetings since their inauguration, and manifest as a body, a degree of interest in the important work they have in hand, which we have never seen exceeded. The members who have been in attendance, most of them at every meeting, are Messrs. Calvert, Earle, McHenry, Merryman, Wharton, Brune, Carroll, Eldridge, Davis, Sothoron, Purnell, Hambleton, Graham, Goldsborough, Dennis of Fred'k., Brown and Worthington. Mr. Pearce owing to his public duties, reluctantly declined to serve. So that but four members, and those from the most remote counties, have failed to attend.

At a meeting which took place on the 14th ult., the vacancy occurring by the resignation of Mr. Pearce, was filled by the unanimous election of Mr. Wilkins, the State Senator from Kent county, a warm friend of the Institution; and that caused by the resignation of Dr. Wharton, on his election as Register, was filled by the Hon. J. Dixon Roman of Washington Co., well known as one of the most public spirited citizens of the State. An amendment of the charter by the late Legislature authorized additional trustees—one for the Eastern and one for the Western Shore, and one for the District of Columbia. It authorized also the election of Honorary members of the Board from other States, with the privilege of attending its meetings, but not of participating in the action of the Board. Under the authority of there amendments, Col. John C. Groome was chosen a trustee for the Eastern Shore, and Otho H. Williams, Esq., for the Western Shore, and W. W. Corcoran, Esq., for the District of Columbia. Dr. Wm. Newton Mercer of Louisiana was unanimously elected an Honorary member of the Board; a compliment elicited by the handsome subscription made by that gentleman to the stock of the College, and the friendly interest he has exhibited in its success.

A committee composed of Mr. Calvert, Mr. Eldridge and Mr. Worthington, with Dr. Wharton, the Register, are authorized to purchase stock, and farming utensils, employ labour, and make all other necessary arrangements for the management of the farm for the present season. These matters are all duly looked to. A considerable orchard has been planted. Vendors of the various fertilizers, guanos, &c., have made contributions of what they have for sale, and careful comparative experiments will be made with them on the several crops to be cultivated in such manner as to test their permanent as well as their immediate effects. It is designed to analyze the several parcels experimented with, to be sure of their quality.

A committee composed of Mr. Calvert, Mr. Earle, Mr. Carroll, Mr. McHenry, Mr. Eldridge, Mr. Brune, Mr. Worthington and the Register, Dr. Wharton, have in charge the selection of a plan for the College Building, and making the necessary contracts, &c., with a view to get the work immediately into operation. At the late meeting of the Board, Mr. McHenry for reasons stated, asked to be excused from further service on the Committee. The committee laid before the board various plans which they had had under consideration, which were duly examined and discussed—the committee wishing to have, as far as possible, the direction of the Board. It is understood that the Building to be erected at once, will be a wing of the structure proposed to be hereafter completed, and will have room enough to accommodate one hundred and twenty to one hundred and fifty students; besides the necessary lecture and recitation rooms, dining room and house-keeping department. Such a building it is estimated can be built without exceeding the present available means of the Institution.

By the late amendment of the charter, the shares of stock in the college have been reduced from twenty-five to five dollars, and it is hoped that a large number of subscriptions will now be made by farmers who might be disposed to show their favour to such a cause, while they could not well contribute the larger amount of the original shares. Arrangements have been made for a more thorough canvass of the State for subscriptions, and we can but think that if this be done, double the amount now subscribed will be freely contributed to so wise and useful a purpose. We anticipate the day when the whole body of Maryland farmers will look with pride upon this work of their hands. A citizen of a distant State, with a heart true to his native soil has volunteered a handsome contribution to this Institution, for which it had no claim but such as sprung from his own generous and enlightened impulses. It is for this reason, rather than for the amount subscribed, that the name of Dr. Wm. Newton Mercer, of Louisiana, stands a name of honor on the first records of the Maryland Agricultural College.

A citizen of Washington, whose intelligent appreciation of the purposes and objects of those who originated the movement, was made known through our columns at its very start, has without solicitation added to very many worthy deeds, for which his name is known, a handsome contribution to the funds of the Institution. Agriculture in Maryland had no claims upon Mr. Corcoran, but an honorable ambition prompted him to associate his name with a work whose promise of usefulness is not local and transient, but National and for all time.

Public spirited merchants and other citizens of

Baltimore, have made liberal appropriations in aid of the College. They have not been slow to see in it, a work worthy the support of all good citizens of the State.

It remains to be seen how far the mass of the farmers of Maryland will second the arduous efforts and sacrifices of those of their body, who for years past have diligently laboured to get this Institution started on a sure basis. It has thus far been a work of trouble and toil and discouragement, but it is now fairly begun. Who shall finish it? Will the farmers of Maryland for whose benefit it is especially designed, take hold of the work and carry it on to completion, or will they leave it to the charities of those, who without any personal interest, look only to the noble ends it is to accomplish; or shall this part of a house which is now to be built, stand hereafter the theme of that mockery—"He began to build, but was not able to finish." Rather may it soon stand complete, in all its noble proportions, like "a city set upon a hill which cannot," and need not "be hid."

ECONOMY OF LABOR IN CULTIVATION.

There is great difference to be remarked in the economy of farm labor in different sections of the country, and even of the State of Maryland. A gentleman from our lower counties who has been accustomed to have a number of negroes about him, goes to the upper counties of the State, and begin operations with eight or ten field hands.—By the time he is fairly settled he will find his next neighbor working the same extent of land, and doing it better probably, with half that number. The difference is more in habit than in degree of intelligence. Where labor has to be paid for directly out of the pocket, the farmer begins to study every method of economy, and no one knows, until he is so put to his trumps, how much may be saved by care and attention in this respect.

In the item of hoe culture in a crop for example, one farmer thinks it necessary to give his corn or potato crop one or two hoeings, another will cultivate the same crops and do it quite as well without putting a hoe into it at all. The difference in the cost of cultivation is a material item in the calculation of profits of the crop.

If we analyse the methods of the two, we find that he whose labor is abundant makes an imperfect preparation of his ground, because he expects to use the hoe in planting, the other prepares his ground perfectly with harrow and roller, because as he does not mean to use the hoe, it is necessary. For the after cultivation, he who uses the hoe is not afraid to let the grass get hold of the ground; the hoe will take it out. He who does not use it starts in his harrows on the first appearance of grass, knowing that that is his only chance to keep it under. When the plough goes in, it is not so important to throw the earth nicely and carefully around the plants, if the hoe is to follow, and therefore the ploughing is done carelessly.—If he knows no hoe is to follow, he increases his skill in doing the work, by the utmost care in its performance; and so his work is done better and his method of doing it always improving.

In the use of labor-saving implements much has been accomplished for the farmer by skilful mechanics, but there remains yet much to be done by himself, in learning how to discriminate between the many implements in use. Immense economy may be practiced by the judicious selection and use of implements peculiarly adapted to their several purposes, but it is the misfortune of farmers that their own want of skill in their use, will lead them not unfrequently to reject a good implement, and their want of judgment n selection, subjects them to a vast deal of imposition in the purchase of worthless ones. Every farmer's son should be thoroughly trained in the use of every implement which the farmer uses.

GAS HOUSE LIME ON WHEAT.

Mr. M. Marcy, P. M. at Green Creek, N. J. writes us, that about 12 or 15 months ago he noticed a paragraph in our paper in which the writer recommended the application of gas house lime to prevent the depredation of the fly in the wheat, and that in the *Fall* of 1857 he operated with the same on a part of his wheat, and the consequence is, that "there is no wheat, and as a matter of course there is no appearance of fly," the gas house lime having destroyed both wheat and fly.—Mr. Marcy, we think, is in error, in supposing the recommendation was found in our paper—no copy of it is sent to his post office, and he has probably seen the recommendation elsewhere, as we have no recollection of ever having seen it anywhere, and have searched for it in vain in our pages about the time specified. We have always been rather cautious in our recommendations about *gas house* lime, under any circumstances, and tho' such a use of it might have been recommended by a correspondent in our pages, yet we do not think such has been the case. There was a recommendation recently made to apply a very small quantity of lime (not *gas-house* however, we believe,) to the growing wheat *in the spring*, which had been found decidedly beneficial.

☞ We are indebted to B. P. Johnson, Esq., Sec. of the New York State Agricultural Society, for a volume of Transactions of that Society for 1856. It is full of valuable essays on Agricultural subjects, among others the third report on noxious and other insects of the State of New York, by Professor Fitch.

APPLICATION OF LIME WITH MANURE.

A correspondent near Petersburg, says: "Some of my neighbors haul out their barn-yard manure on corn land, plough it under, and then immediately spread lime on the surface, the lime is slightly slaked. Is this right? I would be glad if you would, in the *Farmer*, answer the question."

This mode of application is not objectionable. It is only quick lime which coming in contact with the fresh manure would disengage ammonia.—This taking place under five or six inches of soil, the ammonia would be absorbed and retained by the soil above it. But the manure being ploughed under and the lime scattered over the surface, it would be quite sufficiently changed to a carbonate before coming in contact with the manure, to cause any disengagement of ammonia. This period in the course of cropping, is much recommended for the advantage it gives in mixing the lime thoroughly with the surface soil, and producing a quicker action. Many experienced users of lime prefer however, to put the lime on the sod one or two seasons before breaking up.

St. Mary's Co., April 15th, 1858.

To the Editors of the American Farmer:

GENTLEMEN.—Being desirous of substituting a crop of rye, in the place of oats, and to sow it among the standing corn, we desire information, how early may it be sown? will it answer to sow timothy or clover upon it? at what time will it ripen? will it answer to sow wheat after the rye comes off? will it not afford good fall and spring pasturage? and how late in the spring? does it not grow better than wheat on light soils? how will it compare as a monied crop with wheat or oats? would it be better to *cultivate* or *plow* it in among the corn? An answer to these queries and any other information it may be in your power to impart, will be thankfully received by several of your readers. Yours, respectfully,

L. S. GILLIAMS.

In reply to the above, we say to our friend, 1st. Rye may be sown among standing corn, as early as the latter portion of August, and during the first two weeks of September. 2nd. Timothy and clover may be sown with it, if the quality of soil is suitable. The clover sown at this time, however, would interfere with, and diminish the crop of rye, and had better be postponed for that reason, till February or March. 3rd. It ripens, when sown early, before the wheat harvest. 4th. We cannot advise the sowing of wheat after it. Many of our best wheat growers will have no rye upon their farms at all, because of the impossibility of preventing it from mixing with the wheat. A field once sown with rye, will not for years be clear of it; and it has, to say the least, a slovenly and unsightly appearance to have a fine crop of wheat overtopped with scattering bunches of rye. Rye tillers and grows more vigorously than wheat, and to sow wheat immediately after it, it would dispute possession by the seed scattered at harvest to a degree by no means to be desired. 5th. It does make much good fall and winter pasturage. It is excellent especially for ewes with young lambs, causing an ample flow of milk. It may be pastured till the first of April. 6th. It is more suitable to light lands than wheat; it will flourish on such lands as are unfit for this grain unless highly enriched. 7th. As a monied crop, it is on a par perhaps with oats, and on soils suitable for wheat, much inferior to that crop. 8th. It may be put in with cultivators among the standing corn, if the ground is not so grassy as to prevent their working.

In answering our correspondent's questions, we have probably given him all the information he desires. This crop is usually cultivated on the worst land upon the farm, and such as is not considered capable of producing wheat. Its reputation as to value has perhaps suffered from this circumstance. We hope our friend will give it a fair chance, and let us hear from him.

CONVENTION OF AGRICULTURAL EDITORS.

It is proposed, we find by a circular received from the office of the N. Y. "American Agriculturist," to hold a convention of the Editors of Agricultural Journals of the U. States, to spend a week together in the discussion of "some of the more important questions connected with *Soil Culture*"—and the middle of June is indicated as the most convenient season, and the city of New York, as the most central point, for the meeting. Each editor is requested to express his views upon the proposition, and if favorable to it, name his preference for the time and place of holding the Convention.

The main object appears to be to discuss "the subject of chemistry as applied to agriculture," there being at present a wide diversity of views upon that subject—also "as to the value and mode of applying several of the leading fertilizers before the community—of the comparative merits of prominent agricultural implements, books, &c." A meeting of this kind would no doubt be very pleasant to many of us connected with the agricultural press, and it would give us great pleasure to attend a social gathering of the tribe, did other duties permit—but we must in all candor say, that we doubt the utility of such a convention, and do not think the objects in view are obtainable by the means proposed. The several subjects to be debated, are now, and will continue to be discussed in the journals of all these editors, and a fuller scope is thus given for the investigation of any subject, than can possibly be attained by any oral debate within the limited time allotted to the convention. In addition to this, it is well known that there are many men eminent as writers and thinkers, who, when placed before an assembly for the discussion of any matter, would be found to make a decided

failure, for want of self confidence. However, our opinion as to the inutility of the meeting is principally based upon the fact, that most of those who have formed opinions upon any of the proposed subjects, have arrived at their conclusions from investigations of various writers and practical men, and consequently most of the evidence that could be adduced would be the results of similar examinations. As a means of personal intercourse and social enjoyment, between members of the same profession, we have not the slightest objection to the assemblage, and will be pleased to give it our attendance, if determined on, if more urgent duties do not intervene.

The following editors were appointed at an informal meeting of gentlemen accidentally brought together in New York, recently, "to act as a committee of correspondence and to make arrangements for a first meeting," viz:—

Simon Brown, Ed. New-England Farmer.
Luther Tucker, Ed. Country Gentleman.
D. D. T. Moore, Ed. Rural New-Yorker.
Thomas Brown, Ed. Ohio Farmer.
Jas. C. Medill, Ed. Prairie Farmer.
H. P. Byram, Ed. Valley Farmer.
J. Jay Smith, Ed. Horticulturist.
Samuel Sands, Ed. American Farmer.
Frank G. Ruffin, Ed. Southern Planter.
Daniel Lee, Ed. Southern Cultivator.

A GOOD SIGN.—The bill reported by Mr. Merrill, in the House of Representatives, in favor of a donation of land for the benefit of Agriculture and the Mechanic Arts, has passed that body. We hope the Senate will concur in the passage of the bill; but unless the agriculturists of the land, make some immediate effort, we doubt its success in that body at the present time. Let the officers of the various Societies, take immediate action upon the subject, and appeal to their Senators in behalf of the measure.

The bill grants six millions, three hundred and forty thousand acres of land, to be apportioned to all the States—equal to 20,000 acres for each Senator and Representative in Congress to which the States are now respectively entitled. The proceeds of the sales of the lands to be invested in stocks of the United States, or of the States, or some other safe stocks, the money so invested to constitute a perpetual fund, the interest of which shall be inviolably appropriated by each State to the endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific or classical studies, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the Legislatures of the States may prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.

☞The reader is referred to Dr. Holt's interesting report on Wheat Culture, on another page.

LIME FOR POTATOES.

A correspondent of the Scientific American, Smith Groom, of Troy, N. Y. says, that his experience in the culture of potatoes has convinced him that about a handful of dry slacked lime placed in each hill tends to prevent the potato rot. The lime, he states, brings the potatoes earlier to maturity, and imparts to them a vigor which resists the attacks of the disease. An experiment with lime can be conducted by any of our farmers at a small expense, and if it does not prevent the potato rot, the lime will certainly enrich the soil for other crops. Some of the farmers in Baltimore county intend trying the experiment, having confidence in its success. We also notice a statement in another paper, that lime lightly sprinkled over potatoes when putting them away has also been found a preservative from the rot.

HUNGARIAN GRASS—MILLET.—Much has been said of late in the agricultural journals of a grass termed the "*Hungarian*," and application has been made to us to procure some of the seed. The matter has not escaped our attention, but we had some misgivings whether it was not one of our old established grasses under a new name. The editor of the Farmer and Planter, at Pendleton, S. C., says it is nothing more or less than the *Millet*—to the great value of which we have for years past been urgently directing the attention of the readers of the American Farmer who have not meadows whereon to grow hay. In this month (May) up to the beginning of June, though earlier the better, the seed should be sown in our latitude; if the ground is well ploughed, say 6 inches deep, and well harrowed, and 2 pecks per acre of seed sown, with say 300 lbs. Peruvian, or perhaps 150 lbs. of that guano, and an equal quantity of Nevassa guano, 3 tons of excellent hay can be made, which will be relished by all kinds of stock, horses particularly. Upwards of 4 tons have been raised from an acre. It stands the drought probably equal to any of the grass family—and is easily cured. After cutting, which should be when the heads begin to turn yellow, let it lay in the swaths a day,—turn it over the next day after the dew is off, and when the lower side is dry, throw it into cocks, increasing their size, and when sufficiently cured, have it stowed away in your barracks or barn.

A correspondent of Nansemond Co., Va. pays us the following compliment, at the conclusion of a business letter:—

"In conclusion allow me to say, that I have been a subscriber to six different agricultural works, and in my humble opinion the Farmer is superior to all; may you long continue to edit it, live a thousand years (if you desire it) and your shadow never grow less, is the sincere wish of yours, truly, D. H. H."

THE VALUE OF AGRICULTURAL EXHIBITIONS TO THE CITIES IN WHICH THEY ARE HELD.

In the discussion in the Senate of Maryland, at its late session, on the bill granting aid to the Md. State Agricultural Society, a Senator objected to it on the ground that he wanted to throw the responsibility on the city of Baltimore, of sustaining the State Society, its exhibitions causing an expenditure among the traders and manufacturers of at least $100,000 on every such occasion. This is no doubt true, still it is no reason why the farming interest should not also do its part towards the support of such an institution, which aided in the development of its resources; neither was it a good argument for refusing the aid of the State, as by those very developments, the agricultural interest had been the better enabled to pay the taxes levied upon it to sustain the credit of the State for expenditures made, in a great measure, to introduce a rivalry to their productions. The most enlightened States of the Union have evinced their appreciation of the importance of such aid, and have liberally extended a helping hand to similar institutions to that of the Maryland State Agricultural Society.

The Va. State Agricultural Society has determined to hold its next exhibition at Petersburg, Va., instead of Richmond—the City Council of Richmond were asked to submit to a vote of the citizens a proposition to give the State Agricultural Society a permanent annual endowment of $3000—which application was rejected, but $1000 as usual, it was indicated, would be granted. The city of Petersburg, offered $4000 for the Exhibition to be held there, and in addition, so much as may be necessary to pay all expenses of the Fair, if the gate receipts should prove inadequate, which proposition was accepted. The city of Wheeling offered $10,000 if the Fair should be held there, but the distance from the centre of the State precluded its acceptance. The Planter remarks :—

"We do not blame the Council for having cast off the State Agricultural Society; and they should not blame the Executive Committee for having gone elsewhere. If the Society have proved a bad bargain to them they ought not to renew it; and they must decide that question for themselves. We certainly regret that they have not thought the Society worthy of their continued support; that they estimate so lightly the advantage to both classes of an annual renewal of good offices and friendly greetings. But that is their affair as much as ours, and they were entitled to decide. But we beg to enter a protest against the claim that they have been excessively liberal. The annual payments show that about five thousand members of the Society have come to Richmond annually. Probably as many, not members, also come — This aggregate cannot spend on their visits less than ten dollars each, or about $100,000. About 20 per cent. of this, or $20,000, is the clear gain of Richmond. She offers $1,000 a year for a continuance of this. Now, as she gets the difference, $19,000, we think the boot of gratitude is on the other leg; for in the matter of expenditure the contribution of the country is to the contribution of the city as one to twenty! But this is a low estimate, and the probability is that the relative expenditure of liberal town and ungrateful country is as one to thirty."

NEW AMERICAN CYCLOPEDIA.

We have received from the publishers, Messrs. D. Appleton & Co., of New York, the first two volumes of this work, which comes commended to our attention by the most talented literati of the day and age—as well as by many of the distinguished men of our country in all the pursuits of life. The work is edited by Geo. Ripley and Chas. A. Dana, aided by a numerous select corps of writers in all branches of science, art and literature.

The design of *The New American Cyclopædia* is to to furnish the great body of intelligent readers in this country with a popular Dictionary of general knowledge.

The New American Cyclopædia is not founded on any European model; in its plan and elaboration it is strictly original, and strictly American. Many of the writers employed on the work have enriched it with their personal researches, observations, and discoveries; and every article has been written, or re-written, expressly for its pages.

It is intended that the work shall bear such a character of practical utility as to make it indispensable to every American library.

Throughout its successive volumes *The New American Cyclopædia* will present a fund of accurate and copious information on science, art, agriculture, commerce, manufactures, law, medicine, literature, philosophy, mathematics, astronomy, history, biography, geography, religion, politics, travels, chemistry, mechanics, inventions and trades.

This work will be published exclusively by subscription in fifteen large 8vo volumes, each containing 750 two-column pages. Vol. 1. now ready, containing over 2,500 original articles, will be sent be mail to any address, *free of postage*. Price per vol., cloth, $3; library style, leather, $3.50; half morocco, $4; half Russia, extra $4.50.

In order to the attainment of a large circulation, the Publishers also issue the New Cyclopædia in 25-cent Numbers, containing 64 pages each, and $1 parts, containing 256 pages each. (Every fourth number and each $1 part contain a steel plate portrait of some distinguished man.) Thus, those who prefer paying for the work at the rate of 25 cents, $1, or $3, at a time, will be enabled to do so—*a desideratum* which, it is thought, a person of moderate means will gladly avail himself of.

IVERSON GRASS.

To the Editors of the American Farmer:

Please let me give the American Farmer, my experience with the Iverson grass seed. I purchased of you one peck of the seed last year, for $5; after preparing the ground well, I seeded about the middle of September and brushed it in, and have looked till now, without seeing a symptom of vegetation. I hope others have better luck than

Yours, respectfully, THOMAS JACOBS.

Horsey's X Roads, Sussex Co., Del. April 14, 1858.

MARYLAND INSTITUTE FOR THE PROMOTION OF THE MECHANIC ARTS.

The Annual election for officers of this flourishing Institute, located in our city, took place on the 21st ult. The Hon. *Joshua Vansant*, who had filled the office of President for nine consecutive years, having declined a re-election, the names of several gentlemen were placed in nomination, all of whom however, prior to, or at the time of election, having declined the same, except Mr. S. SANDS, he was declared duly elected, by the unanimous consent of the Institute. The election of the other officers was then proceeded with. The following gentlemen compose the Board of management for the ensuing year, viz:—

President—Samuel Sands.

Vice Presidents—Gen. Jas. M. Anderson, and Hon. Thos. Swann.

Recording Secretary—G. H. Hunt, Esq.

Corresponding Secretary—Lawrence Sangston, Esq.

Treasurer—Hugh Bolton, Esq.

Board of Managers—Messrs. John F. Meredith, Adam Denmead, Thos. J. Lovegrove, Thos. Trimble, S. S. Mills, Thos. J. Hand, W. W. Maughlin, D. L. Bartlett, Wm. Keyser, C. W. Bentley, Hugh Sisson, Wm. Henry Johnson, J. Crawford Nelson, A. H. Jenkins, Wm. Bayley, Jno. W. Randolph, Ezra Whitman, Jas. M'Nabb, Chas. Reeder, Samuel Hindes, Chas. Webb, John Jones, J. Mowton Saunders, Henry W. Slicer.

Actuary—Jno. S. Selby, Esq.

A committee being appointed, waited upon Mr. Sands, the President elect, and conducted him to the hall, when he was placed in the chair by Mr. Vansant and received with warm applause. In assuming the chair he expressed his gratitude to the membership for the great honor they had conferred upon him by selecting him as the presiding officer. He remarked as follows:

Mr. President and Gentlemen of the Maryland Institute:

I appear before you to present to you my most fervent thanks for the compliment which has been conferred on me in my elevation to the distinguished post of President of the Institute—an honor of which any citizen of our goodly metropolis might well be proud—numbering as it does on its roll the names of nearly 3,500 members, embracing the real bone and sinew of our city.

It is an honor, gentlemen, at this time unexpected and unsolicited, as, but for the deference paid to the earnest solicitations of a number of the earliest and most devoted friends of the Institute, I would not have permitted my name to be placed in nomination at this time—not from any want of appreciation of the distinguished honor which an election would confer, but from the fear, in the first place, that the other duties of life which devolve upon me would prevent, without a great sacrifice, my bestowing upon the station that time and attention which I am aware it must require at the hands of its occupant; and in the second place, doubtful of my abilities to sustain the Institute in that prosperous and useful position to which it has attained under the guidance of my respected predecessor, whose devotion to its interest has never slackened from the period at which he entered on the discharge of its duties to the present time, and to whom the Institute owes a debt of lasting gratitude. It will, however, be my earnest endeavor to carry out those well devised plans which have been inaugurated by those who have preceded us in the management, and feeling confident that, as heretofore, an able Board of Managers will be selected to aid in sustaining the character and usefulness of the Association, I can only pledge myself to use every effort to the accomplishment of that end, and what I may lack in ability, I promise to make up in my zeal and devotion in behalf of the great objects for which the Institute was established, and maintain it in the present proud pre-eminence which it enjoys among its sister associations of the world—for I believe it is now unequalled by any other in this or any other country.

With these assurances, gentlemen, I again reiterate my thanks to you for the honor conferred upon me.

A vote of thanks was offered by Mr. N. Thayer, and unanimously adopted, to Mr. Vansant, for his long, faithful and valued services to the Institute—to which he responded in a feeling manner; he briefly adverted to the gratification he had experienced for nine years past in his official association with the Institute, and reviewed the good results which had been achieved by its operations. He assured the membership that his association officially with them would ever be regarded as a high honor, and to have served them acceptably would always prove a source of high gratification to his recollection.—Although compelled by other business demands to decline their invitation to continue in that capacity, still he would assure them that the best interests of the Institute would always receive his warmest regard—and he trusted he would always be willing to contribute to its continued success.

Mr. Vansant before leaving the room, after the President elect had taken the chair, renewed his thanks to the members for the many evidences he had received of their confidence, and alluded in a very flattering manner to his successor, as one of the original founders of the Institute, and the services he had rendered in aiding to build it up to its present position. The remarks of the retiring President were frequently interrupted with repeated plaudits from the members.

FIELD PEAS.—In our advertising pages will be found Mr. J. V. Jones' advertisement, offering to furnish peas to the farmers and planters of this vicinity. Many of our readers will remember the lot of peas, embracing many varieties, sent us some year or two ago, by Mr. Jones, and which we distributed to applicants. Mr. J. has been for 15 years engaged in originating and cultivating the best varieties of the *field pea*, and has probably a larger and greater collection than any living individual of this grain—embracing 75 to 100 varieties—many new and very valuable for general 4 of the most valuable kinds, which will be sold cultivation. He proposes to send to our care 3 or at his price, with charges added—or if put up in small lots, at a cost to pay something for the trouble.

DR. BALDWIN'S THEORY.

We received, some time since, a letter from Dr. Baldwin, in which he seems to take exception to our remarks on his theory in the January No. of the Farmer, and deems it strange that we should have hesitated to publish his views as given some years since in another agricultural journal. One moment's reflection should convince the Dr. that it is not our province to discuss every theory that may find its way into the public prints. We must be permitted to be the best judge of the manner of conducting our journal, and therefore have had no wish to open a controversy upon the subject any more than we would with Mr. Comstock, on his *terra culture* theory, or upon the long disputed question, does wheat turn to chess? and many others which have, from time to time, been mooted by the press.

In regard to a remark, which Dr. B. takes exception to, that the subject had been pressed upon us in an "anomalous manner" we would say, that it was not intended for him, and our language does not, we think bear him out in appropriating it to himself.

With these remarks we present the following from the Plow, Loom and Anvil, of 1849 or 1850, the Dr. deeming it but justice to him, that we should give his theory in his own language. We hope it may have been by this time fully tested, so that the landholders are able to determine for themselves, whether "the raw material is better and more profitable than the manufactured article, that is, *the shade* to be better than *the manure.*"

[From the Plow, Loom and Anvil.]

We give place with pleasure to the inclosed communication from Doctor Baldwin. Should the theory it maintains be finally established, the discovery will constitute a very striking epoch in agricultural annals. Who has not observed in the midst of the poorest old fields, luxuriant growths of grass coming up through its branches where a bush lies covering the ground? While we should like to know what the scientific have to say to this theory, we have understood that the plain practical farmers in the valley, now believe they can make their lands rich by shading them with anything; accordingly, they are covering them with brush, straw, and clover, finding, as it is said, the raw material better and more profitable than the manufactured article, that is, *the shade* to be better than *the manure.*

WINCHESTER, *September.*

DEAR SIR:—I submit for the consideration of your agricultural readers a few plain propositions. If you are possessed of any facts, which create a doubt of the truth of any one of them, I shall be pleased to see them stated in your journal.

Proposition 1st. Of the various changes which vegetable and animal substances undergo, during their decomposition, the product of the one only which has proved to be the aliment of plants is the residue of putrefaction.

2d. Each change is a distinct and peculiar chemical process, differing not only in the circumstances requisite to produce it, but also in the nature and chemical composition of each product.

3d. The value of each product depends very materially, upon the attention paid the circumstances necessary to generate each peculiar process. This is known to be true with regard to the vinous and acetous fermentations, and is equally true with regard to every other.

4th. That a close, cool, dark, and damp location, with a contact of air, is indispensable to the generation of the putrefactive process. All organic substances experience this change only, when thus located.

5th. No substance whatsoever will undergo the putrefactive process, when exposed to heat, light, and a free circulation of air.

6th. That decay, or eremacausis, is a distinct chemical process, differing essentially from the putrefactive, in the circumstances which produce it, as well as in the quantity and quality of the product, which is invariably destitute of fertilizing virtues.

7th. Putrefaction may be considered the ultimate result of vegetable and animal decompositions; because it forms the only product incapable of any other chemical change, and is consequently indestructible.

8th. That the excrement of animals is not manure. Like the bodies of animals, it never becomes the food of plants until subject to putrefaction.

9th. That the value of manure materially depends upon the perfection of the putrefactive process; that is, the strength or fertilizing qualities of the manure may always be estimated by the density and duration of the shade to which it has been subject.

10th. That the surface of the earth itself will readily undergo the putrefactive process, if favorably located, that is, if densely shaded, which of necessity implies a cool, dark, close, and damp location.

11th. That the fertility imparted to the earth by shade, that is, manure made of the earth itself, is more durable and therefore more valuable, than that made of any other substance whatsoever.

12th. It is not true that the impoverished condition of any soil proceeds from a deficiency in one or more of its mineral constituents, because all soils, alike, may be made exceedingly fertile by *shade alone.*

Yours, respectfully,
R. T. BALDWIN.

THE ACT FOR MEASURING AND WEIGHING GRAIN.—The new act for the inspection and weighing of grain will go in operation on the 1st of May, when the newly appointed Inspector General and his four assistants will commence operations. We published this act at the time of its passage, and as it is a law which is only operative, at the option of the owner of grain, who can sell with or without inspection as he may think proper, it is hardly worth while to repeat it again in our columns. The Inspector is to be allowed one cent per bushel on wheat, and one half cent on all other grain inspected; one half to be paid by the purchaser, and the other half by the seller, and as the grain will have to pay the inspection fees we can scarcely think it possible that they will amount to sufficient to pay office rent.

Messrs. McConkey, Parr & Co., extensive grain factors in Baltimore, have issued a circular to their correspondents, suggesting that those who desire to avoid the expense imposed on the sale of

wheat, corn, and other grain under the act should give authority to dispose of the same, without complying with it, and have prepared a form of the necessary authority, to that effect, which we annex. They also add—

"There is nothing in the law to compel the weighing of corn, which is still sold in our market under the measure system, as heretofore.

"If, however, you are under the impression, notwithstanding our objections to the law, that your interest will be better served by it, it will afford us pleasure to do the best for you that circumstances will admit."

The document to which they refer is in the folfowing form.

Messrs. McConkey, Parr & Co., Baltimore:

GENTS: You are hereby authorized and directed to sell whatever Grain we may hereafter ship to you, without inspection, and deliver the same without complying with the provisions of the law of the State of Maryland, entitled "An Act to provide for the Inspection, Measuring and Weighing of Grain in the City of Baltimore.

INSPECTION OF MANURE.—The act passed by the Legislature for the measuring and inspection of all manures sold by the cart load, will go into operation on the first Monday in May, when the Governor will divide the city into four districts, and appoint and commission four inspectors, one for each district. The inspector is to receive three cents a load from the purchaser, in all cases, and is to require each load to consist of a specified number of cubic feet. We can see nothing in the act except the fact that the inspector receives his fee, as no other duty is prescribed. The articles to be inspected are we presume street dirt and stable manure, and all country wagons and carts coming to and from the city are to be exempt from the operation of the clause or to the measurement of the vehicle.

THE NEW GAME LAW.—This law goes into force on the 1st of June, 1858, and is especially for the protection of patridges, pheasants and quails in Baltimore, Howard, Anne Arundel, Carroll, Calvert, Washington, Frederick, Allegany, Kent, St. Mary's, Somerset, Cecil, Queen Anne's and Dorchester counties. The penalty is $5 for each and every offence; and taverns and restaurant keepers are liable to the same fine if they expose or offer for sale any such birds during the periods that the law protects them from the gun or trap, viz:—Woodcocks between the 1st of February, and the 10th of June—Pheasants between the 1st of February and the 12th day of August—and Patridges and Quails between the 15th of January and the 1st of October.—*Baltimore American.*

REMEDY FOR LEAKS.—A correspondent of the Lynn News says:—"Some years ago I had a leaking 'L.' Every northeast storm drove its waters in. I made a composition of four pounds of rosin, one pint linseed oil, and one ounce red lead, applied it hot with a brush to the part where the L joined the main house. It has never leaked since. I then recommended the composition to my neighbor, who had a Lutheran window which leaked badly. He applied it and the leak stopped. I made my water cask tight by this composition, and have recommended it for chimneys, windows, &c., and it has always proved a cure for a leak."

LECTURE ON ARTIFICIAL MANURES.

Prof. Voelcker, of Cirencester, England, on the 21st Dec. last, delivered a lecture before the Wenlock Farmer's Club, on the subject of Artificial Manures, from which we make some extracts:

"There could be no question as to the great improvements which have taken place since artificial manures have been introduced into farming. The great demand for artificial manures is the best proof that in many instances they have not been misapplied, for no man will spend money for a succession of years upon something which brings him no useful result. The fact, therefore, that new companies and new businesses are started almost everywhere, proves that artificial manures when judiciousiy applied, are a great boon to the agricultural community. Within the last three or four years manufacturers of artificial manures have sprung up like mushrooms, and it was therefore not to be wondered at that some inferior descriptions have been offered to the notice of the farmer. It must also not be forgotten that in many instances artificial manures have proved complete failures. The question, therefore, arose, What is the reason of these failures? It was not always easy to discover the reason. In some cases artificial manures have been injudiciously applied; *i. e.*, in too large or too small quantities.—He had seen guano used in quantities that would certainly do more harm than good—too large, that was, for the soils or crops to which it was applied, to the exclusion of farm-yard manure and other manures more suited for root crops. In passing, he observed that guano should not be used generally upon any soils for crops dependent upon the development of the roots. For turnips, mangolds, and other root crops, the manure should have a large proportion of bone material—phosphates, as the chemists call them. In some cases again, the failure must be attributed to the artificial manure which has been supplied; and he grieved to say that in the present day there was a much larger number of inferior than superior kinds of manures sold. The diagrams would show the analyses of different kinds of manure. One of them was the London Economical, which at one time made a great noise, and was used in different parts of England and Scotland. It was accompanied by a small volume of testimonials, all speaking of it as a most efficient manure; whereas it contained nothing which was known as possessing fertilizing properties in a very high degree. If any good effect had therefore been produced by its application, it must be attributed rather to the good farming, or to any uncommonly good season, which, as was well known, often was more effective than the best manure. (Hear, hear.) And indeed it was almost impossible by experiments, continued even for two or three seasons, to ascertain the practical value of a manure; but in the long run a really good manure will be found out. He remembered the time when there were almost as many people against guano as there were now for it. Not very long ago hardly any purchaser for bones could be found; and even now no bones were used on the continent, hence the large importations of that article to this country. Everybody knew that artificial manures were more efficacious under some circumstances than others; and why? Because the effect produced by arti-

ficial manures would be just in proportion as it supplied the ingredients which were deficient in the soil. Artificial manures sometimes failed, too, by reason of the mechanical condition of the land being such that it could not produce its legitimate results. For instance, fresh bone-dust does not act upon the soil at all for the first year, very little the second, and only a partial effect the third. For want of sufficient air the materials remains very much in the condition after the first six or twelve months in which it is put in. Excess of moisture was often another reason why manures were unproductive. Without good draining no amount of artificial or natural manure would produce a very large crop. It would be seen, then, that the practical efficacy of artificial manures is known by a variety of circumstances; and it would also be clear that the commercial value of artificial manure does not necessarily coincide with its practical efficacy—the commercial value of artificial manure being much more fixed in its character than the practical value."

"The question—and a very important one it was—then arose: what description of manure ought you to use? and secondly, what ought you to pay for a manure of a certain character? No person should understand so well as the farmer himself what is really required for his particular farm; and in practical matters no fixed rule can be laid down. Some general hints may be thrown out which have been collected from a number of experiences in various districts, which are useful as a basis; and it is from the experience of farmers living in many counties in England and Scotland we know that, generally speaking, ammoniacal or nitrogenous matters are peculiarly beneficial to corn crops. In making this statement, he left entirely untouched the question whether mineral substances are not an advantage in some instances for corn. He knew that they were.—But, on the whole, substances rich in nitrogen are applied with great benefit to the corn crops.—Hence good rotten dung was better than fresh manure, because weight for weight it contained a larger amount of nitrogen. He wished them to understand that he did not recommend well-rotted dung under all circumstances; because it was generally better to take the manure as fresh as possible, and get all that was valuable out of it upon the land. But because rotten manure contained a larger amount of nitrogen in the shape of ammoniacal salt, it generally produced greater effects than the fresh. So with guano—a small quantity of this produced such extraordinary results; because it contained in one cwt. as much ammonia as a ton of well rotted farm-yard manure. The effect of manures did not depend upon anything mysterious. Manure from half-starved animals would never be good, no matter how much it was turned, and it was not the mere rotting that made it good. In good Peruvian guano there was from 16 to 17 per cent. of ammonia. It was important that they should recollect that there was a great difference between good Peruvian guano and that which had been brought over since the best layers had been cleared away. In good guano there was also a large proportion of phosphates or bone earth. The solid part of bones consists of phosphoric acid and lime, and this would explain why it is that good guano produces a good effect upon turnips."

A subsequent lecture was delivered by the Professor, at the close of which the following conversation took place:—

Mr. George Davies, as a farmer, was much obliged for the able and practical lecture which they had just heard. He wished to know if the learned professor could tell him how red clover could be retained on light soils from February until June. He had some years ago conversed with Dr. Pepper on this subject, and was now in communication with Mr. Nesbit, but the latter gentleman had not answered the question he now put.

Dr. Voelcker said, this question was a most important one, which it would be most desirable to solve. About four years ago, he paid some attention to what was called "clover-sickness," and, like most beginners, in two months he fancied he knew something about the matter, and threw out some suggestions, with a view to remedy the evil. Having, however, followed up the question in various operations, and in the laboratory, and after some long correspondence, he had come to the conclusion that, upon the subject of clover-sickness, he knew as much or as little as the man in the moon.

Mr. Davies asked if the fermentation of ordinary manure would render chipped bones sufficiently soluble to be of use to the crop?

Dr. Voelcker thought it would be quite sufficient; and, after one turning, the bone-dust would disappear. It would, in his opinion, be a very great advantage to use bone-dust in that way.

Mr. Payne inquired if the Professor recommended long manure to be ploughed in, or used as a top-dressing?

Dr. Voelcker said, in very stiff land it would be better to plough it in, as in that way they obtained the full advantage of the manure.

The Chairman, in the course of some observations, asked if the plan recommended for keeping up the wheat was by stiffening the straw? If so, superphosphate would be much more likely to do that than ammonia.

The Professor said he knew, in some instances, that super-phosphate stiffened the soil; but that was a different thing from recommending it for the purpose of stiffening the corn. Ammoniacal manures certainly had a tendency to make corn go down, and should, therefore, be used very carefully."

MANURE IN THE HILL.

The application of manure to the corn hill, is thought by some to be of little benefit, from the fact that the corn roots branch off so rapidly from the hill, and feed outside of the circle enriched by this dressing. It is argued moreover that if at the time the grain is forming a sufficiency of food is within the range of the roots, it is of little importance comparatively how the plant has fared before—the idea is that there is no close connexion between the growth of fodder and the quantity of grain it may produce, and that if it were possible so to regulate the application of a fertilizer as to bring it to bear upon the grain instead of the stalk it were all the better.

These are plausible theories which we do not think have been properly tested by experiment. The general experience favors applications to the

hill; and such applications as will prove most suitable to nourish the plant in its tenderest stage of growth. The true philosophy is that what gives vigorous growth to the young plant, gives it power, so to speak, to appropriate more effectually such food as it may find in the soil, and this not only by greater expansion of its roots but by increased vital energy which enables it to assimilate food which a more delicate plant would reject. That the roots are not only passive recipients of such food as may be presented to them, but have an active power both in seeking its food and reducing it to an available condition, if not a clearly ascertained fact, is probable from analogy. That this is a common belief appears from the very usual modes of expression—one class of facts being spoken of as "gross feeders" and others the contrary. The following article by a correspondent of the *Country Gentleman* is a very decisive experiment in favour of manuring in the hill, and shows to some purpose the wise economy of preserving and properly using an article of manure which is too commonly wasted because it seems to be but a small matter. When will farmers learn to husband carefully all these little matters which make up mostly the difference between plenty and want. The pounds take care of themselves—the pence out of which the pounds are made are the "little matters" that require to be looked after.

Eds. Country Gent.—In your paper of April 16th, 1857, is recorded the result of an experiment with hen manure—how composted, and in what manner applied. The past year I have also tested the value of hen manure as applied to the corn crop, and with results the most astonishing; substantiating in my view the remark made in a former article, that the value of concentrated manures, applied to the young and feeble plant, of whatever kind, was not sufficiently understood by our farmers. And if this article should induce any of your readers who have been in the habit of applying all special fertilizers in a later stage of the plant's growth—whether ashes, plaster or hen manure—to try at least a few rows of corn, the manure for which shall be so applied that the young plant in its *earliest* stages of growth shall receive benefit therefrom, and notice the result of such trial—then I am confident that what I shall write will not prove a mere "waste of printer's ink."

The past season my corn field of eleven acres was meadow sward, turned over a few days before planting, and all manured alike, with common barn-yard manure. Soil a rich gravelly loam, that for two years previous had averaged at least two tons of hay to the acre.

I am thus particular for the reason that I would show sufficient strength of soil to grow "some corn," without the aid of *any* foreign fertilizers; and fully equal to the average corn-fields of the State. Four rows, running north and south, through the centre of the field, were planted at the same time, and under the same circumstances as the remainder of the field, minus the application to each hill before planting, of a compost of hen manure, plaster and ashes. From these four rows I harvested just 6½ bushels of sound corn; or a trifle over 1½ bushels to the row. From four rows immediately adjoining, I husked just 12½ bushels of sound corn, or a trifle over 3 bushels to the row—the "hog corn" in both instances being nearly equal. I am aware that this proves a difference hardly credible; and yet the facts warrant me in saying that I nearly doubled my yield of corn by applying merely a table-spoonful of the above compost to each hill; for so trifling expense and labor, reaping large reward indeed! Brother farmers! ye who are in the habit of applying your special manures either at the first or second hoeing, try a few rows at planting time—a hurrying time it is true—and my word for it, your corn by hoeing time will be able to take care of itself; for then hundreds of tiny roots will have pierced the decaying mould, supplying itself with whatever is requisite for the growth of the parent stalk.—J. E. S. *Maple Grove, Del. Co., N. Y.*

AGRICULTURAL BUREAU.

A special meeting of the New Castle (Del.) Agricultural Society, was held in March, at Wilmington, at the instance of Maj. John Jones, who, with Anthony Higgins, Esq., made reports, claiming and exacting of Congress their share of the public lands for school and agricultural purposes—and also in regard to the establishment of an Agricultural Bureau, with a Cabinet Minister at its head, at the seat of the National Government.—We learn that "after a free discussion and excellnet speeches from several members, it was unanimously resolved to submit all reports, papers, &c., to a select committee of five for adjustment, with a view to a final report and its being brought before Congress at an early day. Hon. John Wales, Maj. Jones, A. H. Adams, Dr. Grimshaw and Bryan Jackson, the President, constituted the committee. An old member here presented Mr. Joseph Lovering's beautiful and successful specimens of sugar and syrup or molasses lately so successfully made, refined and presented by that native of Delaware, to this and many societies and those interested in the increased cultivation of domestic sugar throughout the United States, from the Chinese sugar cane. Upon this absorbing subject much interest was felt and expressed. Mr. Anthony Bidderman remarked from his experience, as an esculent for cattle, hogs, horses, &c., it could not be surpassed. They would all begin and eat the stalk first, showing their judgment of sweet things—the blades next and the seeds last. The President and a number of other gentlemen were greatly in favor of giving it in this State a fair trial, as it would much cheapen the cost of sugar and molasses—supply the wants of all, poor and rich, and be so valuable an addition to the provender and food for cattle. After this exhibition and discussion, T. J. Adams, Esq., offered a resolution tendering the thanks of this Society to Mr. Lovering (a native of Delaware) for his successful operations with the Chinese sugar cane, and his valuable pamphlet and information in it, and that 500 copies of the same be published by the Society for distribution among its members."

VIRGINIA STATE AGRICULTURAL FAIR.—We see it stated in the *Southern Farmer*, that the Fair of the Virginia State Agricultural Society will be held at Petersburg, under the auspices of the Union Agricultural Society.

MOLES.—A correspondent at Ringgold, Va., asks for a remedy for the ravages of moles—he has tried traps and arsenic pills, but without effect. We have seen a cheap, and we think it will be found an effectual iron trap, which costs 37 cents, and can be had at Mr. T. Norris' Agricultural store, Light street, Baltimore.

The same correspondent says, that some of our lady friends would be pleased to have a recipe for making turpentine soap. Can any of our correspondents aid us in the premises? In the meantime we offer the following:—

TO MAKE SOFT SOAP.

Take 20 pounds of potash and dissolve it in 25 gallons cold soft water, (an iron kettle is the best to put it in.) It will take 5 or 6 days to dissolve, unless the weather is perfectly warm. When dissolved, take 20 pounds of clean grease or rough grease that will make that weight, and cleanse it with white ley, then strain it through a seive or cullender in a soap barrel and add the potash ley, being careful not to disturb the sediment, then soak the sediment of the potash with a few gallons more soft water, and pour it into the barrel, so as to save all the strength of the potash.

In this way I have never been over 3 days in making a barrel of soap, and as to its quality I should be proud to exhibit it before any lady in the State. In regard to the best time for making soap the month of April or May is as good as any; or just before hot weather commences; as all rough grease must then be looked after, or the flies will take the matter into their hands.

TOBACCO ANALYSIS.

The following Analyses of the ashes of the leaf and stalk of tobacco were made in the Laboratory of Prof. Chas. B. Stuart, of Randolph Macon College, by Mr. W. A. Shepard. We are personally acquainted with both of these gentlemen, having passed some time with them in the Yale College Analytical Laboratory, and from what we know of their carefulness and skill, we attach considerable value to the analyses as here given. The dried tobacco leaf and the stalk were carefully burned.—One hundred parts of the dried leaf yielded about 18¼ (18.47) parts of ashes, which is a very large proportion, when we remember that most kinds of wood and other vegetable substances give but two or three per cent. of ash. 100 parts of the ashes experimented upon gave as follows:

	Leaf.	Stalk.
Sulphuric acid,	2.95	4.12
Chlorine,	5.93	14.42
Phosphoric acid,	6.08	6.70
Lime,	35.83	26 34
Potash,	30.46	35.32
Soda,	2.95	1.14
Magnesia,	6.96	8.30
Soluble silicæ,	1.59	17
Charcoal and sand,	6.95	3.88
Iron, merely	a trace.	a trace.
	99.70	100.39

The absence of iron is somewhat remarkable, as there is usually considerable quantities of this substance found in the ashes of most plants. We see that full two-thirds of the ash is potash and lime. Every 100 pounds of dry tobacco would, according to this analysis, have taken from the soil about six pounds each of potash and lime.

The specimens used were of the variety known as the "Oronoco" raised in Southern Virginia.—*American Agriculturist.*

[From the Southern Farmer—Petersburg.]

THE OSAGE ORANGE.

The value of the Maclura as a Hedge Plant, notwithstanding some diversity of opinion on the subject, has, we think, been satisfactorily established. That there have been instances of failure is doubtless very true, and it would be wonderful if it were otherwise. The management of hedges has been very imperfectly understood in this country; and in addition to ignorance, they have often been totally neglected. We have, to a considerable extent, been familiar with the Osage Orange for twenty years, and have had some knowledge also of other plants used for hedging; and the Osage Orange, according to our observation, combines more of the requisites for making a live-fence than any other plant. The growth is vigorous, it is perfectly hardy in the coldest climates, and it will make a hedge in a much shorter time than any thing else we have seen. With good cultivation and proper treatment in cutting-back and pruning, it will present an impervious barrier to stock in four or five years.

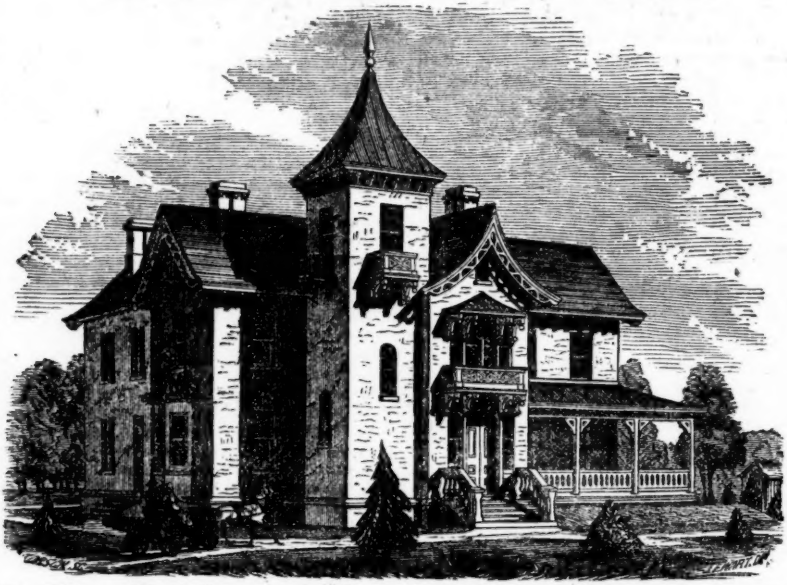
The following testimony to its value in localities on which we have never seen it tried, is taken from the private letter of a distinguished agriculturist and horticulturist in Ohio, and shows that it is particularly suitable for planting on land subject to inundation:

"The Osage Orange will bear flooding better than any other tree or plant (not natives of swamps or streams) with which I am acquainted. In winter or early spring, when not in leaf, it might be under water for weeks without injury; and I have known it to bear inundation a whole week in midsummer without injury. It is just the thing for planting in river bottoms and situations where fences are liable to be carried off by freshets."

WORKING AND THINKING.—It is a no less fatal error to despise labor when regulated by intellect, than to value it for its own sake. We are always, in these days, trying to separate the two; we want one man to be always thinking and another to be always working, and we call one a gentleman and the other an operative; whereas the working man ought always to be thinking, and the thinker often to be working; and both should be gentlemen in the best sense. As it is, we make both ungentle, the one envying, the other despising his brother; and the mass of society is made up of morbid thinkers and miserable workers. Now it is only by labor that thought can be made healthy, and only by thought that labor can be made happy, and the two cannot be separated with impunity. All professions should be liberal, and there should be less pride felt in peculiarity of employment, and more in excellence of achievement.—*Ruskin.*

☞ On page 344, of April No. the distance at which Chinese Sugar Cane should be sown, was printed 2 feet by 1; it should have been 3 *feet by* 1, a single grain, when a quart of the seed will be sufficient for an acre.

ROSE HILL--The Residence of W. Wilson Byrne, Esq.

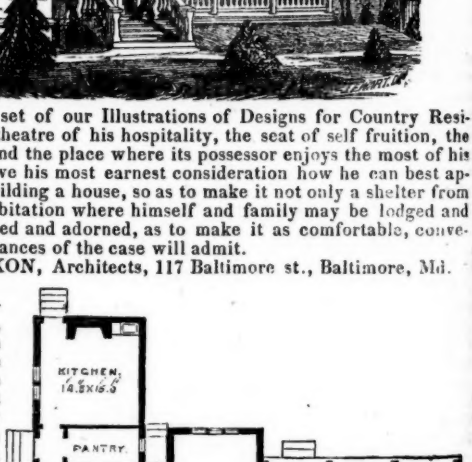


Messrs. Editors:—We send you the second set of our Illustrations of Designs for Country Residences. As every man's house is the proper theatre of his hospitality, the seat of self fruition, the home of those most dearly cherished by him, and the place where its possessor enjoys the most of his true comfort and happiness, it may well deserve his most earnest consideration how he can best apply the means he proposes to appropriate to building a house, so as to make it not only a shelter from cold and heat—from storm and sunshine—a habitation where himself and family may be lodged and fed, but, that it may be so arranged, constructed and adorned, as to make it as comfortable, convenient, expressive and beautiful as the circumstances of the case will admit.

THOS. & J. M. DIXON, Architects, 117 Baltimore st., Baltimore, Md.

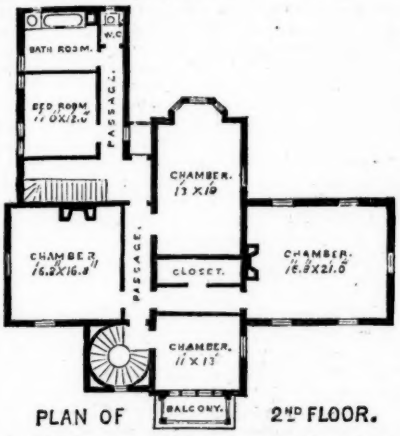
The accompanying design for a villa residence, was prepared for W. Wilson Byrne, Esq., a few years ago, and carried out by him at "Rose Hill," his beautiful place on the Choptank river, near Cambridge, Md. The position selected for the house is on a slight eminence, a few hundred yards from the river bank, commanding a good view up and down the river. The extent of the water prospect from the upper story of the tower is very great. The gentle slope of the grounds as they fall off from the house—a graceful curve of the noble old river in full view, and the expanding sheet of water it forms as it flows on to the Chesapeake Bay, a few miles distant—the large masses of woodland, and the easy undulations of the surrounding country, give to this site more of the beautiful than the picturesque.

The view here given is of the river front.—The approach to the house is from the opposite direction. The accompanying plans illustrate so clearly the general arrangement, and the accommodation afforded, as to require but very little description or explanation. The parlor, library and dining-room, are entered from the hall. The library communicates with the parlor and dining-room. The principal stair-case is in the tower, entered from the hall. The kitchen, pantry, and private stair-case are connected with the dining-room and library by a passage. The kitchen is separated from the other rooms by the pantry and passage, thus excluding the fumes and heat of the kitchen from the other parts of the house.



PLAN OF 1ST FLOOR.

The plan of the second story contains five chambers, a bath-room, water-closet, and large linen closet. The attic has three bed-rooms, a room to store carpet, and a tank loft.



PLAN OF 2ND FLOOR.

As will be seen by the accompanying view, a flight of steps with heavy balustrade, give prominence to the entrance. The broad verandah is an essential feature in an American country residence, particularly in the Middle or Southern States.—The eaves have a broad projection, to shed the rain and snow off from the house. The window from the chamber over the hall, opens to the balcony over the entrance door, from which a good view of the river is obtained; this balcony is sheltered by the projecting hood over the window.—The oreal window of the chamber over the library, and the balcony over the porch in the recess, are happy features in the composition. The high pitch and graceful curves of the roof add beauty to the design, and by the arrangement and grouping of the different parts, we think a pleasing outline is obtained and a good effect produced, without a sacrifice of convenience of plan.

Persons about to build will find it greatly to their advantage to procure proper plans, specifications, and working drawings. We send drawings by express and also by mail, to different parts of the country at a very small cost.

THOS. & J. M. DIXON, Architects.

THE BILL GRANTING AID TO THE MD. STATE AGRICULTURAL SOCIETY.

The following are the proceedings in the Senate, on the last night of the session of the legislature, on the bill from the House of Delegates, granting aid to the State Agricultural Society:—

Senate, March 10th.

The bill entitled "an act in favor of the Maryland State Agricultural Society," was read the third time.

Mr. Wallace, submitted the following amendment—amendment proposed: Strike out the whole of the first section and make section second, section first.

Insert after the word "that," in the first line of section 2nd, "the Treasurer, upon the warrant of the Comptrollor, be and he is hereby directed to pay"—which was read.

[The object of this amendment was, to strike out the first clause of the bill, granting $4,500, and confining the amount to $500 per annum, as provided for in the 2d section.]

The question upon its adoption was determined in the negative by yeas and nays, as follows:

Affirmative.—Messrs. Clarke, Daniel, Gardner, Hoffman, McCullogh, McMasters, Nuttle, Stone, Wallace.—9.

Negative.—Messrs. Webster, Pt., Bowdle, Graham, Brooke, Kimmel, Miles, Smith, Turner, Wilkins.—9.

The question upon the passage of the original bill was then determined in the negative by yeas and nays, as follows:

Affirmative.—Messrs. Bowdle, Brooke, Franklin, Gardner, Graham, Kimmel, McCullogh, Turner, Wilkins.—9.

Negative.—Messrs. Webster, Pt., Clarke, Daniel, Hoffman, McMasters, Miles, Nuttle, Smith, Stone, Wallace.—10.

Mr. Brooke, moved to reconsider the vote upon the rejection of the bill.

The question was determined in the negative by yeas and nays as follows:

Affirmative.—Messrs. Bowdle, Brooke, Franklin, Hoffman, Kimmel, Turner, Wilkins.—8.

Negative.—Messrs. Clarke, Daniel, McCullogh, McMasters, Miles, Nuttle, Smith, Stone, Wallace.—9.

Said bill was then returned to the House of Delegates.

The following are the yeas and nays on the passage of the bill in the House of Delegates, on 4th March:—

On motion of Mr. Contee, of Prince George's, the rules were suspended and the bill was read a third time and passed by the following vote, and sent to the Senate, viz:—

Affirmative.—Messrs. Berry, Speaker, Neale, Wickes, Tongue, Mackubin, Kilbourn, Magruder, Walker, Allender, Ford, of Balt. Co., Lynch, of Balt. Co., Smith, of Balt. Co., Clarke, Tilghman, Davis, Kidd, Contee, Landing, Spence, Hearn, Thomas, Koons, Hobbs, Baron, Stirling, Smith, of Balt. city, Kennard, Lynch, of Balt. city, Harrington, Crowley, Forrest, Alexander, Schnebley, Ridlemoser, Thruston, McKinstry, Day, Dorsey.—38

Negative.—Messrs. Meginnis, Griffiss, Burgess, Stonestreet, Waller, Moore, Sudler, of Som., Dail, Richardson, Grieves, Harding, Bowlus, Root, Baker, McPherson, Rohrer, Gray, Duvall, Worthington, Kilgour, Barnard, Mountz, Reindollar.—23.

PEABODY CORN.—A correspondent near Beaufort, S. C. says:—"I perceive that you have got into the Peabody Humbug corn. I was induced from the great flourish about it last season, '56, to purchase half a bushel from the agent—this I planted in tolerable good land with a little manure to test its bearing quality. Separated from this lot by several acres of Sugar Millet, I had the like number of the old Baden Corn, which I have endeavored to keep pure; both lots were treated in like manner as regards manure and culture—the yield was the same, 20 bushels per acre; several planters who noticed these lots pronounce the selection to be the same, and I feel assured you will come to the same conclusion."

THE LATE EDWARD P. ROBERTS, ESQ.

We briefly announced in our last, the death of this gentleman, who departed this life, in the 66th year of his age, after a short illness, from a stroke of apoplexy, at his farm near this city. The departure of such a man from the stage of life, calls for more than a mere passing notice. Mr. Roberts, though bred to the profession of a merchant, was devoted to literary pursuits, and notwithstanding he was in early life debarred the opportunities of a collegiate education, yet possessing a vigorous and comprehensive mind, and studious habits, was enabled to overcome, to a great extent, the disadvantages of his early life. The father of Mr. Roberts, who resided at the capital of the State, where Edward P. was born, was a soldier in our Revolutionary struggle, and a gallant partaker in that ever memorial exploit, one of the most important in its results, and daring in its execution, of the war, the storming of Stony Point, under the command of Gen. Wayne, better known through the contest, from his daring bravery by the *sobriquet* of "Mad Anthony." At the time of his death, the elder Roberts was one of the attachés to the Senate of Maryland; and though then quite a youth, the office was continued to the son, by whom the salary was appropriated to the maintenance of his widowed parent. Mr. Roberts removed to this city, and entered the service of the late Jno. Wilson, Esq., as a grocer, with whom he served an apprenticeship, and after arriving at his majority, commenced the same business, in which, however, he continued but a short time. At the attack upon the city, during the last war with Great Britain, Mr. Roberts took an active and gallant part, as an officer of the regiment commanded by Col. Long. At the commencement of that great political struggle, which eventuated in the first election of Gen. Jackson to the Presidency, over Mr. Adams, the friends of the latter established a paper in this city, called "*The Marylander*," for the advocacy of his re-election, the conduct of which was entrusted to Mr. Roberts, his well known talents as a writer for the public press, (although not before, we believe, directly connected with any publication,) being well known to the leading friends in this State, of the then administration. Those who are familiar with the period alluded to, can well remember the exciting scenes connected with that great struggle, the result of which was the commencement of a new era in the political aspects of this country—and whether favorable or otherwise to the party whose cause was espoused by the "Marylander," still they cannot fail to admit, the great tact and talent displayed in its management, which was mainly due to the powerful mind of Mr. Roberts. Kentucky was considered the battle ground of that campaign, as Pennsylvania was on a similar occasion more recently, and every effort was requisite to carry the State election, which preceded a few months that of the Presidential—and in such high estimation as a campaign paper, was the "*Marylander*" held by the friends of Mr. Adams and Mr. Clay, in Congress, that a large edition of the paper was published and disseminated especially to influence the Kentucky elections—and it is said that Mr. Clay was heard to declare, that it was the ablest political journal next to Duane's Aurora ever published in this country. After the election had terminated, the printer, one of the present editors of the Farmer, having considerable claims for work done, took charge of the subscription list, and having purchased the interest of F. H. Davidge, Esq., in the "Chronicle," united the two papers, which was thenceforward published by Messrs. Leakin and Sands, under the title of the "Daily Chronicle and Marylander," which became a leading ogan of the party in opposition to the new administration. Mr. Roberts was its principal political editor, for some years, when the attention of his mind was attracted in a new direction, though he partially assisted in editing several other political journals at different periods.

After John S. Skinner retired from the proprietorship of the old *American Farmer*, some of our oldest subscribers will remember, his successor, Mr. Hitchcock, became involved in difficulties, which caused a suspension of the publication for some months, but it was afterwards resumed by the same gentleman, under the title of the "*Farmer and Gardener*," when the present senior editor became connected with it, in the line of his profession as a printer. It was continued for about a year by Mr. Hitchcock, who then disposed of the business to Messrs. Sinclair & Moore, who obtained the aid of Mr. Roberts in editing the work, with the same printer. Messrs. S. & M. continued the publication for about two years, when the editor and printer became the proprietors, and it was published by them to the conclusion of the 5th volume, which closed the second series, or 20th year of the existence of the work, when Mr. Roberts disposed of his interest in it to his colleague, and retired from its management. The dimensions of the paper were then enlarged, and the title, the "American Farmer," was again resumed, and the services of *John S. Skinner*, the founder of it, were engaged to edit it, in which capacity he continued for some year or two, until his removal to Washington, where he had received an appointment as Assistant Post Master General. —After this change, Mr. Roberts again became an assistant to the editor and publisher, which post he continued to hold for a number of years, and was, to the day of his death, a regular contributor to its pages. In this connexion it may be proper to remark, that the 3d series, commencing with the second association with it of Mr. Skinner, continued for six years, when the form of the paper was changed to that of an octavo, and from a weekly to that of a monthly publication, which comprises the present or 4th series, which is now in the thirteenth year. To Mr. Roberts is freely accorded the largest share of whatever credit and character the Farmer has attained since his association with it. His judgment and ability were always relied on with the fullest confidence; for we felt assured, whenever he gave his enlarged mind to the investigation of any subject, and he was prepared to express the convictions of that mind, he had the power to maintain those convictions against all opposers.

Of late, though, as we have before remarked, Mr. Roberts continued a regular contributor to our pages, yet his principal engagements were in another sphere, having been connected for a number of years past, as a partner in the house of Messrs. Geo. Page & Co., manufacturers of machinery and implements, in Baltimore. Few men understood the science of politics, if we may so speak, better than Mr. Roberts, and it is difficult to determine

whether his feelings were more ardent in the support and vindication of the principles he espoused, or in his devotion to the investigation of agricultural subjects, to which in his latter days his mind was more particularly directed, and to which his time, that could be spared from his other avocations, was devoted. We had known him from our childhood, a large portion of which time most intimately, and for many years in close connection with him in business pursuits. We always admired him for the strong and comprehensive powers of his intellect, his high-toned honor and chivalric bearing, and for his ardent devotion to what he conceived to be the right. He was a warm friend, a devoted husband and father—his retiring habits always inducing a preference for the calmness of his own fireside, to the more active association with mankind; and apparently shrinking from the public gaze, prevented him from obtaining that prominence in the affairs of the passing world, which his talents would have entitled him. He held during different periods of his life, several offices under the City and State authorities, in all of which he acquitted himself with marked ability, and always commended himself to the approbation and respect of those with whom he was associated.

As Mr. Roberts was so long connected with the Farmer, this notice is due to his memory—and in his own language, when he chronicled the demise of its founder, Mr. Skinner, so *we* will say, that "it is doubly due to the friendship, the regard, nay, the love, which the writer bore to the deceased while living, and to the sorrow which he feels at his death."

FLORICULTURE—May, 1858.

Prepared for the American Farmer, by W. D. Brackenridge, Florist and Pomologist, Govanstown, Balt. Co., Md.

Camellias, will now have finished their growth of wood; give a partial shade, by white-washing the glass inside; syringe overhead freely, to keep up a humidity in the house, and kill the red spider. Towards the latter end of the month, place the plants in the open air, in a shady place, where they will receive no drip from trees or eaves of buildings.

Dahlias intended for early blooming, may be planted out the beginning of the month; they like a deep rich soil, and if your land is poor, trench 2 feet deep, and enrich it with well rotted manure.

Roses may be planted out any time during the month, and if the weather is dry at time of planting, apply water to settle the earth about the roots before the hole is filled up.

Chrysanthemums can now be propagated by cuttings, or division of the roots.

Pansies grown in pots and boxes, should be planted out in the open ground; choose a partially shaded situation for the purpose.

Roots of *Erythrina, Crista-galli* and *Laurifolia*, ought now to be planted in the open border.

Tuberoses should be planted out about the first or second week in the month.

Salvia Splendens, Scarlet Geraniums, Lantanas and other Summer flowering plants should be turned out into the flower borders during the early part of the month.

Sow hardy annual seeds, and plant out the tender kinds that have been raised in frames or greenhouse.

Shade Tulip Beds—as the flowers begin to open, by so doing, the time of flowering will be prolonged, and the colors will be much finer.

Herbaceous Plants—as Phloxes, Campanulas, Pæonias and Spiraes can yet be divided and moved with safety.

Monthly Carnations—plant out in a warm sandy soil.

Achimenes of different kinds, shift into the pots in which they are to bloom.

From the first to the middle of the month, plants from the Greenhouse and conservatory that are out of bloom may be removed to the open air; choose a moist shady day if possible for this work, and having had previously prepared a bed of ashes or sand, in this plunge the pots about half way up to the brim, this partially prevents them being blown over by the wind, and keeps the roots cool and moist.

TO ASCERTAIN THE WEIGHT OF LIVE CATTLE

Experienced drovers and butchers are in the habit of buying cattle, estimating their weight on foot. From long observation and practice they are enabled to come very nearly to the actual weight of an animal; but many of them would be most apt to err, if at all, on the *right* side; while the less experienced farmer always stands the greatest chance to get the worst of the bargain. To such we would recommend the following rule to ascertain the weight of cattle, which is said to approach very nearly the truth, in most cases. The proof of this to the satisfaction of any farmer, is easily determined at most of the annual fairs, where scales are erected, and at numerous other points in the country.

RULE.—Take a string, put it around the breast, stand square just behind the shoulder blade, measure on a rule the feet and inches the animal is in circumference; this is called the girth; then, with the string, measure from the bone of the tail which plumbs the line with the hinder part of the buttock; direct the line along the back to the fore part of the shoulder blade; take the dimension on the foot rule as before, which is the length; and work the figures in the following manner: Girth of the animal, say 6 feet 4 inches, length 5 feet 3 inches, which multiplied together makes 31 square superficial feet, and that multiplied by 23 (the number of pounds allowed to each superficial foot, of cattle measuring less than seven and more than five feet in girth,) makes 713 pounds. When the animal measures less than nine and more than seven feet in girth, 31 is the number of pounds to each superficial foot. Again, suppose a pig or any small beast should measure 2 feet in girth, and 2 along the back, which feet in girth and 2 along the back multiplied together, makes 4 square feet, that multiplied by eleven, the number of pounds allowed to each square foot, of cattle measuring less than three feet in girth, makes 44 pounds.—Again, suppose a calf, a sheep, &c., should measure 4 feet 6 inches in girth, and 3 feet 9 inches in length, which multiplied together make 15 1-4 square feet; that multiplied by 16, the number of pounds allowed to cattle measuring less than 5 feet and more than 3 in girth, makes 265 lbs. The dimensions of girth and length of horned cattle, sheep, calves and hogs, may be exactly taken in this way, as it is all that is necessary for any computation, or any valuation of stock, and will answer exactly to the four quarters, sinking the offal. The rule is so simple that any man with a bit of chalk can work it out. Much is often lost to farmers by mere guess-work in the weight of their stock, and this plain rule is well worth their attention.—*Valley Farmer.*

NEW ADVERTISEMENTS.

W. W. Dingee, York, Pa., offers a new Fan, which he calls the Climax Grain Fan, which cleans wheat fit for market at one operation.

T. T. Nelson, Baltimore Co., Md., stands his Vermont again this season, and refers to some colts of his get for his character as a breeder.

P. T. Tyson, Esq., State Chemist, gives notice to the public of the location of his office, &c.

Jno. S. Reese & Co., offer their manipulated guano to tobacco planters; they also present a number of reasons why it is superior to Peruvian Guano.

W. Whitelock & Co., Baltimore, offer their Super-phosphate of lime, which they claim to be superior to any other.

J. J. & F. Turner, Baltimore, continue their proofs from those who have used the De Burg, of its superiority over Peruvian Guano, and caution the public against any other not bearing their standard stamp.

Wheeler, Melick & Co., Albany, N. Y., offer their Endless Chain Railway Horse Powers, and Farmers and Planters Machinery for Horse Power use, which they warrant to give satisfaction.

Twells & Co., Philadelphia, offer Chemical Pulverized Bones, and Bortel's Improved Super-phosphate of lime, which they consider "superior to all."

Obed Hussey, Baltimore, in addition to what he has said elsewhere in his regular advertisement, hands us the testimonials given in another column, received during the past month, which are much to the point, as is also proved by Dr. Holt's testimony in his report on Wheat Culture in this number of our Farmer.

Messrs. Lemmon & Brogden, Baltimore, offer two tracts of land in Anne Arundel County, near the junction of the Washington R. R. and within an hour's ride of Baltimore and Washington, which would make an excellent Tobacco Farm, and will be sold very low.

A small Farm is also offered (application at this office) in Montgomery Co., Md., 20 miles from Washington, 177 acres for $2500. Another near Williamsburg, Va., admirable for a market farm.

R. Sinclair, Jr. & Co., offer Implements for Spring and Summer work, Plows, Cultivators, Harrows, Grain Cradles, Fanning Mills, Corn Drills, their premium bevel geared Segment Horse Power, their Spiral wrought iron elastic cylinder Thrashing Machine, Wimple's Thrasher and Cleaner.—Also Seed Corn, and Garden and Field Seeds of every kind. They have also just introduced several new implements, to which attention is particularly directed, viz: a Combined Roller and Harrow—another for preparing corn land for wheat—a Corn Harvesting Machine—a Corn Stalk and Chinese Sugar Cane Cutter and Masticator, besides a number of other articles heretofore noticed.

Peabody Strawberry Plants, Peabody Corn, Camanche and Wyandotte Corn, are for sale at this office. Also Devon Calves.

Addison, Wallace & Co., Alexandria, Va., are the agents for Ray's American Reaper and Mower.

Briscoe, Hilles & Co., Havre-de-Grace, Md., offer the Wrightsville, Pennsylvania, Lime, to the farmers of Md. and Va.

Dr. Goode, of the Hot Springs of Virginia, presents to the consideration of invalids particularly, and seekers of pleasure generally, these celebrated Springs, and produces such testimonials, from a number of the most eminent Physicians and distinguished men of our country, of their healthy qualities, particularly in the diseases enumerated, that we would suppose the afflicted would flock to them to be healed with as much faith as did the impotent folks of old, who waited for the troubling of the waters at the pool of Bethsada, to enjoy their saving efficacy.

Owen Dorsey & Co., offer their Reaper and Mower with their celebrated Self-Raker, which received the premium at the trial of Reapers and Mowers last July, at Chestertown—they present a number of testimonials of its value.

H. K. Burgwyn, Gareysburg, N. C. will offer a large tract of Roanoke river land for sale, on the 20th May. This will be a fine chance for speculators, or for Eastern men who, having gotten enough in speculating in lands at the West, are now turning their attention to those of the South—these lands we are told are intrinsically worth as much as the lands in the more middle States which readily sell at $75 to $100 per acre, and they will no doubt be sold a bargain, as the large landed proprietors of that region are anxious to induce a settlement of a thrifty small farmers in their vicinity; read the advertisement, and note the referees.

Wm. Dorebacker, Baltimore, invites farmers and others to visit his celebrated Three Tuns Tavern, a house we have known by reputation almost as long as we remember ourselves—and that dates a good many years back.

Gabriel D. Clark, Baltimore, asks attention to his assortment of Watches, Jewelry, Silver Ware, &c.

The Executive Committee of the Md. State Ag. Soc. meets in June, on important business—the members will bear it in mind.

Drayton G. Meade, Alexandria, Va., offers for sale the Manny combined Reaper & Mower, with Wood's Improvement, which bore off the first premium at the Trial at Chestertown, Md. last harvest—and also at sundry other trials elsewhere during the last year or two.

A Market Farm, (application at this office) is offered for sale, near Williamsburg, Va., which is worthy the attention of those wanting a convenient farm for marketing early vegetables and fruits—circumstances induce the belief that this farm will be sold cheap.

Ab'm Patterson, Balt., renews his advertisement offering Esmeraldo Guano to farmers, of which he sold a large amount last season.

Cornell & Dorsey, Baltimore, also offer Coe & Co's Steamed Bones, and Phosphate of Lime.

Wm. Trego, Baltimore, asks particular attention to his Phospho-Peruvian Guano, which he considers the "Ne plus ultra of all fertilizers,"—this is a new article, and from the reputation of Mr. Trego as a manufacturing chemist of many years standing, is worthy the attention of farmers and planters—Read what he says.

C. Warns, Elkridge Landing, Md. offers his premium Bee Hives, Swine and Fowls.

E. Whitman & Co, in addition to a number of other articles advertised in this number, offers the Wire Spring Tooth Horse Rake to wheat growers, this is the implement which took the premium last summer at the trial at Chestertown, Md.; they also offer the Grant, Bamborough and other Wheat Fans, and Manny's combined Reaping and Mowing Machine, with Wood's improvement, which also bore off the prize at the exhibition last harvest in this state and elsewhere—likewise Burrall's Reaper, at reduced prices.

F. W. Bennett, Auctioneer, Baltimore, will offer at public sale on the 20th of May, several head of Alderney Cattle, Bulls and Heifers; and also 2 Devon Bulls of best stock—As the most of these animals will be sold without regard to price, those wishing to obtain such stock will bear it in mind—We will attend the sale, and purchase for those wishing to obtain any particular animal.

C. Morton Stewart, Baltimore, it will be seen by the letter of Prof. D. Stewart, is again appointed agent by De Burg, for the sale of his compound.

Jno. Loeber, Baltimore, offers Essex and Suffolk Pigs.

Mr. McCormick's Reaper is advertised in our pages, by R. T. Elkington; since that portion of it was worked off, we have heard of the death of Mr. Elkington, and are requested to ask that all communications for the present be addressed "to the Agent of McCormick's Reaper, 145 W. Pratt street."

Thomas Norris, Baltimore, is the agent for Dewey's Gleaner, which he offers to the farmers of Tide Water region of Virginia and of Maryland.—Mr. N. also advertises his general stock of Agricultural Machinery, Seeds, &c.

Wm. Merrell, Baltimore, continues to put up his Lightning Rods.

Berkshire Pigs and Ayrshire Heifers, are offered at this office

Francis H. Grupy, Baltimore, calls particular attention to farmers having Hides, &c., to sell.

Poe & Howard, Baltimore, at their Sash Factory, offer all kinds of Mouldings, Doors, Blinds, &c.

Frost.—During the past week, there has been quite heavy frosts, which, it is feared, has affected the cotton. At the North, a snow storm was experienced. The depth of the snow in Vermont was nearly ten inches. Some fears are entertained for the fruit, in some quarters. A letter to the Farmer, from Sparta, Geo., dated 25th, says, "we had quite a frost this morning; the thermometer down to 38 deg.; forward wheat has been in bloom eight or ten days."

BALTIMORE MARKET—April 29.

[Business of every description continues extremely dull—money is abundant with banks and capitalists, but prime business paper is scarce, and the general feeling of distrust which is abroad, superinduced by causes to which we alluded in our last, prevents loans being effected except on the best paper, which is not readily obtained.]

Flour, market dull; we quote city mills, $4.12; Ohio and Howard st. at $4.37; extra $4.62a4.75 for Western; $4.75a4.87 for Howard st., and $5a5.50 for city mills. Rye flour, $3.62; Corn Meal $3.50 for Balt., and $3.75 for Brandywine Mills—Wheat, offerings and demand light; reds $1.03a1.07 for good to prime lots, 1.10a1.16 for fair white; 1.20a1.30 for good to prime, and 1.35 for choice family flour lots; Corn, rather dull, receipts also light; sales at 61a63 for good to prime parcels of white, and 65a66c for prime yellow—Oats were in fair receipt and market steady, Md. and Va. at 34a35 cents; and Pa. 38 a40—Rye, Pa. 75c. and Md. 70c. Provisions, bulk meat dull and rather heavy, shoulders 7¼c., sides 9¼c.; bulk hams 8¼c. for country, and 8¾a9 for Western; sales rather light—mess Pork $19a19.50; prime do. $16; rump $15, mess Beef $17, and No. 1, $14.50 per bbl.; bacon shoulders 8c.—Lard, Western, 11¾c.—Rice 3¾a4c. for fair to good, and 4¼a4¼ for prime, supply large—Salt, Turks Island 20c. per bushel.—Liv. gr. alum 80a85—Sugars, N. O. and P. Rico, $6.50a6.75 for fair to good; $7a7.25 for prime; $6.50a6.75 for good to prime Cuba; $4.50a 5.50 for refining grades N. Orl.—Whiskey 21c. for country, and 21½c. for Ohio—Hay $14a16 for baled and $13a14 for loose; Straw $14a15 for Rye, and 10a12 per ton for Wheat—Cotton, demand fair from spinners, and market firm with an advance of ¼ to ⅜ on good qualities, and prime ¼c. higher on all grades. Peas, black-eyed $3.25 per 2 bushel bag, and white beans 1.12a1.25 per bushel—Guano, demand light, supply good; the quantity sold this spring is very far below that of last year, which we believe is the case with all kinds of manures; prices same as last month.

Spirits Turpentine, 51a52c.; Pitch, $1.75a2; com. Rosin, $1.45 per bbl.; Tar, $1.75a $2. Plaster, lump, per ton, $3.60; ground, per bbl., $1.37. Potatoes, com. White, 60c. Mercer, 75c per bushel. Wool, demand light, prices unchanged. Cattle, Beef ranged from $4 to $5.25 on the hoof, equal to $8a9.50 nett, and averaging $4.50 gross. Hogs, $7a7.75 per 100 lbs., nett. Sheep, $4a4.50 per 100 lbs., gross. Tobacco, in consequence of the recent rains, planters have been able to get their crops packed, and in market, and the receipts are consequently increased; in general, former prices are fully maintained for good qualities.

PRACTICAL HINTS TO AMATEURS.

Grafts may be cut Nov., as well as later in the winter, if more convenient to you. Keep them in a cool place, half buried in earth or sand till you want them. If not wanted till spring, bury them out of doors with only a couple of inches of the points exposed, and throw two or three inches of litter over them.

Strawberry beds will produce good crops in open winter quarters in the northern States; but they will bear much better ones, and much larger fruit, if you cover them lightly with straw, salt hay, or stable litter; otherwise you are likely enough, in stiff soils, to find half the plants dead or injured by being "thrown out in the spring."

You may transplant, all winter, when the ground is not frozen; only take care not to expose the roots to frost while not covered with soil. In winter planting, it is best to pile up a mound of earth six or eight inches around the trunk of the tree. This keeps it steady, and protects it, partially, against severe frost.

If you are very anxious to be cheated, send to some nursery that modestly informs the public of its immense superiority over every other establishment in the world; or that offers hundreds of varieties of "splendid, pre-eminent, and delicious" fruits, not to be found elsewhere—or that challenges competition for accuracy. Where there is so much modesty in boasting, there must be a great diffidence in sending you anything but what the dealer knows to be first rate; and you must be aware, yourself, that there are now *hundreds* of *first rate* fruits. If you send to a nursery for a new variety of tree or plant, don't expect to see the plant as high as your head, or the tree fit to bear a bushel of fruit. Be content if it is healthy, has a good root, and is a foot high.

People "in the trade," can't afford to send you large trees, full of grafts or cuttings, of sorts which are scarce as guineas, and which have not been long enough in the country to enable them to get more

than one year's growth. If you want "big trees," order the good old standard sorts.

When a tree brought from a distance has been a long while out of the ground, and looks quite dried, don't plunge it into a tub of water; that would be well nigh as fatal as giving a gallon at a single drink, to a man nearly dead with thirst. *Moisten* the roots, and after shortening the branches severely, bury the *whole tree* in the ground for three or four days.

When you prune a small branch of a tree, always see that a bud is left opposite the cut; this will help it to heal over quickly; and you will assist the matter still more, by making the cut always a sloping one.

If you are obliged to plant trees in the rich, but worn out soil of an old garden, and you have not time nor means enough to cart away part of the old soil and replace it with new, you can renew the fertility by throwing a part of it up in heaps, mixing it with brush, faggots, sawdust, or any sort of cheap fuel, and burning it.

Don't let insects of various kinds overrun your orchard or garden, and then lazily fold your arms and say, "Its no use, this trying to raise things, now that so many vermin are about." Spend three days, industriously, in the early stage of the matter, in putting down the rascals, and then look around you and see if a little industry is not better than grumbling.

If you want early vegetables, set yourself, in winter, about making some boxes to protect them. A few cheap boxes, a foot square, with a pane of glass in the top, to put over tender things at night, will cost you but a trifle, and will give you ten days start of the open ground.

To have good currants, gooseberries, raspberries, the old plants should be dug at the end of three or four good crops, and their place supplied by young ones. If you plant a few cuttings of the former, as you should do, every spring, you will always have a supply of fresh plants ready at all times; always cut out all the eyes, (buds) of a cutting, on that part which goes in the ground; otherwise you will be troubled by their coming up, year after year, in the form of *suckers*.

Do not grudge the cost and labor necessary to plant a few of the best shade trees round your house; and if you have any doubts about what to plant, stick in an elm. There are few trees in the world finer than a fine sweeping elm; and two or three of them will give even a common looking dwelling a look of dignity. If you plant fruit trees for shade, they are likely to be broken to pieces for the fruit, and they grow unsightly by the time that forest trees grow spreading and umbrageous.—*Horticulturist.*

ALDERNEY OR JERSEY CATTLE—The editor of the Connecticut *Homestead*, who visited the State Fair at Bridgeport, saw there some of the Alderney cattle belonging to John Giles, of Woodstock, and Gideon Thompson, of Bridgeport. He thus speaks of them:

The delicate deer-like heads, great mild eyes, and light limbs, together with the rich yellow of the skin, and the softness of the coat, shows that the pure Alderney cow has some characteristic excellencies to relieve the stigma which her loose bony frame and otherwise criticizable form might give her. The bulls are ugly, both in looks and often in disposition. Mr. Thompson's is one of the best we have ever seen. The breed is only superior for milk; especially for butter, as our readers are aware, and a grade animal having very little Alderney blood shows it most distinctly in the rich yellow color of the cream and butter, and the milk of a single Alderney cow, or of one or two grade Alderneys will serve to impart the characteristic color and flavor to the butter of quite a herd of common cows.

WHAT SORT OF A BUCK SHALL I CHOOSE?

Having decided on the breed which you wish to propagate, and satisfied yourself that the buck has pure blood of that breed, look carefully at the following points:

1. Let him not be less than two years old, if you wish to use him much this year. A younger buck will beget poor progeny, and injure his own constitution, if put to full service.

2. Let him not be too old, especially if he has seen hard service in former years. Learn his exact age and amount of previous service, if you can. If an old buck has been only moderately used, and has been well fed, he may be better than a young one, of inferior quality.

3. Never allow a deformed buck among your ewes. Be sure to secure the best and most symmetrical shape consistent with the breed you wish.

4. It is needless to caution you against buying or using a buck that is sick or weakly—no one would do this knowingly. We would say, however, be sure to learn all about the matter. Disease and weakness in a flock of sheep can be had without paying heavy prices for them.

5. We think some proportion should exist between the size of the buck and that of the ewes; or *vice versa* will do as well.

6. Select, if possible, a buck of a kind disposition. This cannot always be done; but when it can be, it should never be overlooked.

All these points are on the principle that "like begets like."—*Ohio Farmer.*

HIDES! HIDES!! HIDES!!

To Country Merchants, Farmers, Butchers,

Having either dry, or dry salted or green hides on hand, I would say, that I am now paying the outside price, as usual, of any one in the Baltimore market; and would advise all having Hides to sell, to call and see me before selling, or consign, through their regular commission merchants; if they have none, direct to me, and thus save themselves from the annoyance of irresponsible hucksters and others, who prowl around the wharves of our city.

I am now paying from 14½ to 17 cents per pound for prime well dried merchantable Hides, as to weight, condition, and quality, of same—and 5½ to 6½ and 7 for Green Hides per piece for prime salted Calf-skins—and the very highest price for Sheep and Lamb Skins, Tallow and Wool. Parties will please take notice of my prices, &c. &c.

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